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A REVIEW OF THE PASSANDRIDAE OF THE WORLD
(COLEOPTERA, CUCUJOIDEA).I - GENUS *PASSANDRA* DALMAN

INTRODUCTION

This paper is the first part of a study which will include revisions of all known genera and species of the Passandridae of the world. The first four parts will include only taxonomic revisions of particular genera and will provide published geographic distribution data. Following the taxonomic revisions, part V will provide phylogenetic and geographic analyses for the entire family and the particular genera. The last part will also include a key to the world genera.

Although *Passandra* (and *Hectarthrum*) have long been known to the entomologists as the oldest genera of the family (or subfamily in Cucujidae) because of relative large size and distinct features, the genus has received relatively little attention from taxonomists. The only key to the world *Hectarthrum* is that of WATERHOUSE (1876), quite incomplete for present purposes. LEFKOVITCH (1963) recognized the differences between *Passandra* and *Hectarthrum* on the basis of head structure, neglecting the hitherto used characters, i.e. the antennal structure. He first published a key to the African species of *Hectarthrum* and revised all available types of African species. Twenty years later I (ŚLIPINSKI, 1983) published a more complete review of the Afrotropical species of *Passandra* with brief diagnoses and redescriptions of each species. I also considered *Hectarthrum* Newman as a synonym of *Passandra* Dalman. Unfortunately, the last paper includes some errors because the proof sheet was not accessible to me for reading, and be-

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cause basing on a Lefkovitch's key three apparently Oriental species were redescribed from Africa based on mislabelled specimens. This paper correct these mistakes and revises the world *Passandra* with complete redescrptions and illustrations. Many nominal species are synonymized because of great external variation of at least two Indo-Australian species, but hopefully the characters chosen for species definition will stabilize their position and will make determination consistent.

The revision is based on all available types of nominal taxa and material of approximately 2500 specimens received or examined « in situ » from the following institutions:

- BMNH - British Museum (Natural History), London;
- BPBM - Bernice P. Bishop Museum, Honolulu, Hawaii;
- DEI - Deutsches Entomologisches Institut, Eberswalde;
- EMLU - Entomological Museum, Lund University, Lund;
- FSCA - Florida State Collection of Arthropods, Gainesville;
- IRSNB - Institut Royal des Sciences Naturelles de Belgique, Bruxelles;
- IZPAN - Instytut Zoologii, PAN, Warszawa;
- MSNG - Museo Civico di Storia Naturale, Genova;
- MCZ - Museum of Comparative Zoology, Cambridge, Mass.;
- MHNG - Muséum d'Histoire Naturelle, Genève;
- MNHN - Muséum National d'Histoire Naturelle, Paris;
- MRAC - Musée Royal de l'Afrique Centrale, Tervuren;
- NHMB - Naturhistorisches Museum, Basel;
- NHNV - Naturhistorisches Museum, Vienna;
- SAM - South African Museum, Capetown;
- SMD - Staatliches Museum, Dresden;
- TMB - Termesztudományi Múzeum, Budapest;
- TMP - Transvaal Museum, Pretoria;
- UMM - University of Manchester Museum, Manchester;
- USNM - United States National Museum, Washington, D.C.
- ZMB - Zoologisches Museum, Humboldt-Univ., Berlin.

In species descriptions, length is measured along the body midline including head, but excluding mandibles. Outline drawings are taken from dry preserved specimens with an aid of a camera lucida attached to a MST 130 PZO dissecting microscope. The internal structures (preserved in glycerine) were drawn with an aid of a camera lucida attached to Zeiss Amplival Microscope.

TAXONOMY

Passandra Dalman

Passandra Dalman in Schoenherr, 1817: 146, Type-species, by monotypy: *Passandra sexstriata* Dalman, 1817.

Hectarthrum Newman, 1838: 398. Type-species, by monotypy: *Hectarthrum curtipes* Newman, 1838 = *Cucujus gigas* Fabricius, 1801 - Lefkovitch, 1963; Ślipinski, 1983.

Diagnosis

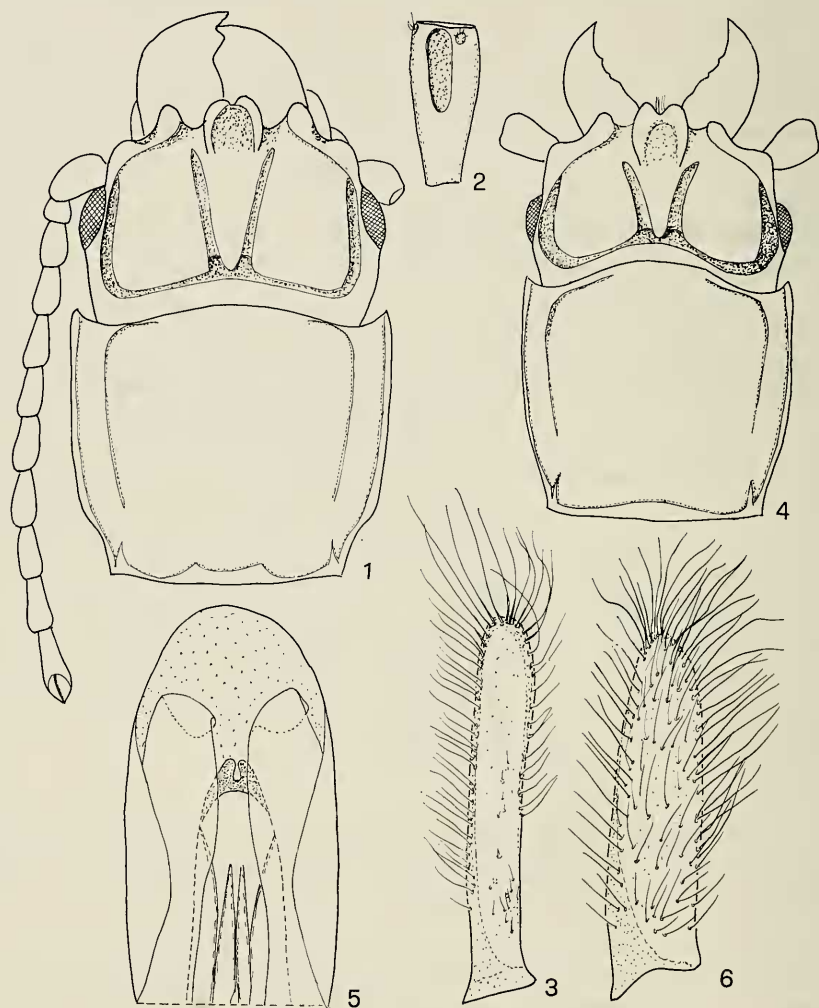
Passandra shares with *Passandrina* Reitter, *Catogenus* Westwood, and *Laemotmetus* Gerstaecker the basal tarsomere (I) of all tarsi short, much shorter than tarsomere II. *Passandrina* Reitter, endemic to Madagascar, is very distinctive because of its antennomeres III-XI strongly flattened and densely hairy ventrally, the elytra with yellowish or orange callosities as in Malgassy Chaetosomatidae, the occipital groove absent, the pronotum lacking sublateral lines, and 4-5 completely grooved lines on each elytron. *Laemotmetus* seems to be the most primitive and distinctive member of the family Passandridae because of 10 complete, feebly impressed, punctate lines on each elytron, the last antennomere symmetrical and feebly keeled along anterior margin, and the occipital groove and sublateral lines are lacking. *Passandra* differs from *Catogenus* in having antennomeres III-X ventrally impressed or grooved, the admedian grooves on the head usually well developed and joined basally to occipital groove bordering the median process, the elytral lines III and IV never complete and joined basally, and sublateral lines on pronotum almost always present. *Catogenus* should be divided into two distinct genera. *Catogenus* proper, because of its distinctly keeled, last antennomere, the last abdominal ventrite with semicircular groove, and the prosternal process widely expanded apically, should be restricted to the New World only (ŚLIPINSKI, in prep.).

Diagnostic combination

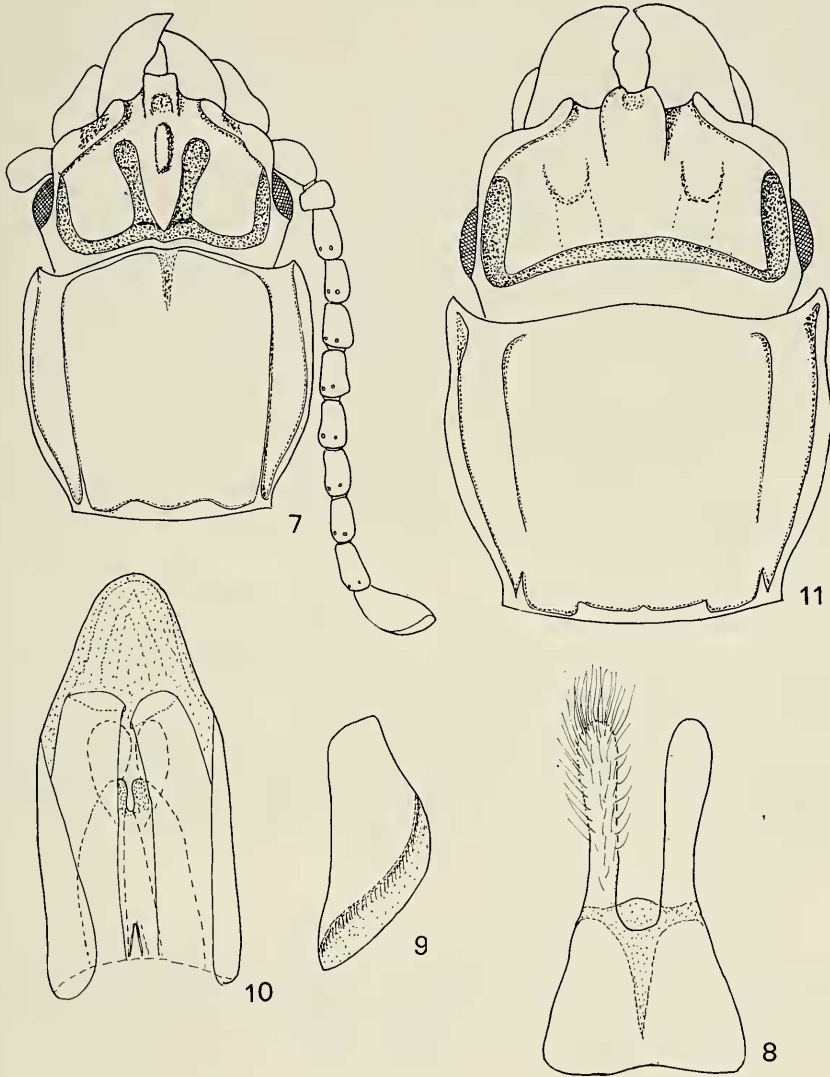
Medium sized (5 to 35 mm long), moderately flattened to almost subcylindrical; colour brown to black, rarely bicoloured with elytra darker than pronotum, surfaces shiny, rarely mat.

Head with sublateral carinae and usually sublateral grooves limited externally by the carinae, well developed and usually joined to transverse occipital groove; occipital region (basal margin of occipital groove) sometimes emarginate or notched medially; admedian grooves almost always well developed (except for *fasciata* and *sexstriata*) and joined posteriorly to occipital groove, bordering laterally median process;

admedian grooves clearly limited anteriorly (closed), or gradually becoming obsolete (open) near meeting with sublateral carinae anteriorly; median process rounded or acute apically (when meeting with occipital groove), flat to almost carinate dorsally, sometimes carinate anteriorly



Figs 1-6. *Passandra* species: *elongatula* (1-3); *blanchardi* (4-6). 1, 4: head and pronotum; 2: antennomere IX, ventral; 3, 6: paramera, dorsal; 5: median lobe, apical piece, ventral.



Figs 7-11. *Passandra* species: *marginata* (7-10); *fasciata* (11). 7, 11: head and pronotum; 8: parameres; 9: last antennomere; 10: median lobe, ventral.

and carina reaches clypeal region; clypeus well separated, bordered laterally by distinct carinae, rarely not separated or flat. Antenna 11-segmented with last antennomere asymmetric and keeled; antennomeres III-X impressed or grooved ventrally, the impressed area or groove differing in size and shape, sometimes surrounded by sensory area (*penicillata*), dorsally each antennomere with 2 circular sensory areas laterally.

Pronotum subquadrate to slightly transverse, always margined laterally; sublateral lines present (except for *sexstriata*) various in length; sometimes disk with an additional pair of admedian lines or grooves, or coarse punctures in median part; marginal groove along base with median region straight, emarginate or notched in middle. Prosternum with sternopleural sutures usually incomplete, prosternal process parallel-sided for $2/3$ of its length, then abruptly expanded apically, flat.

Elytra with reduced number of lines (grooves) on elytral disk - from the principal number 6 (c.f. *lineicollis*) only two (I, VI) always entire, lines II, V usually shorter and sometimes present. Line (in a key or description) is considered as entire if its length is at least equal to $2/3$ of elytron length.

Ventral side very uniform, without major diagnostic value. Last abdominal ventrite always with deep semicircular groove.

Legs with basal tarsomere (I) minute, barely traceable and always much shorter than the following one (II).

Aedeagus consists of median lobe (with long ventral strut and flagellum) and tegmen with dorsal basal piece and ventrally located articulated parameres. Both apical pieces of median lobe and parameres are diagnostic for species and are figured.

Secondary sexual characters

Males can usually be recognized because of their antennae comparatively shorter and apparently stouter; in some species (*gigas*, *doriai*, *nodicornis*) 2-3 antennomeres markedly dilated, but this seems to occur only in large specimens only (at least in *gigas*).

Distribution

The composite range of *Passandra* species extends from Cuba and Sonora in Mexico, to Peru and Argentina in the New World. Its range covers entire tropical Africa South of the Sahara (including Saudi

Arabia), Madagascar and Indo-Australian area (from Taiwan, South China and Sikkim to South Australia) except for New Zealand, New Caledonia and the Pacific islands of Micronesia and Polynesia.

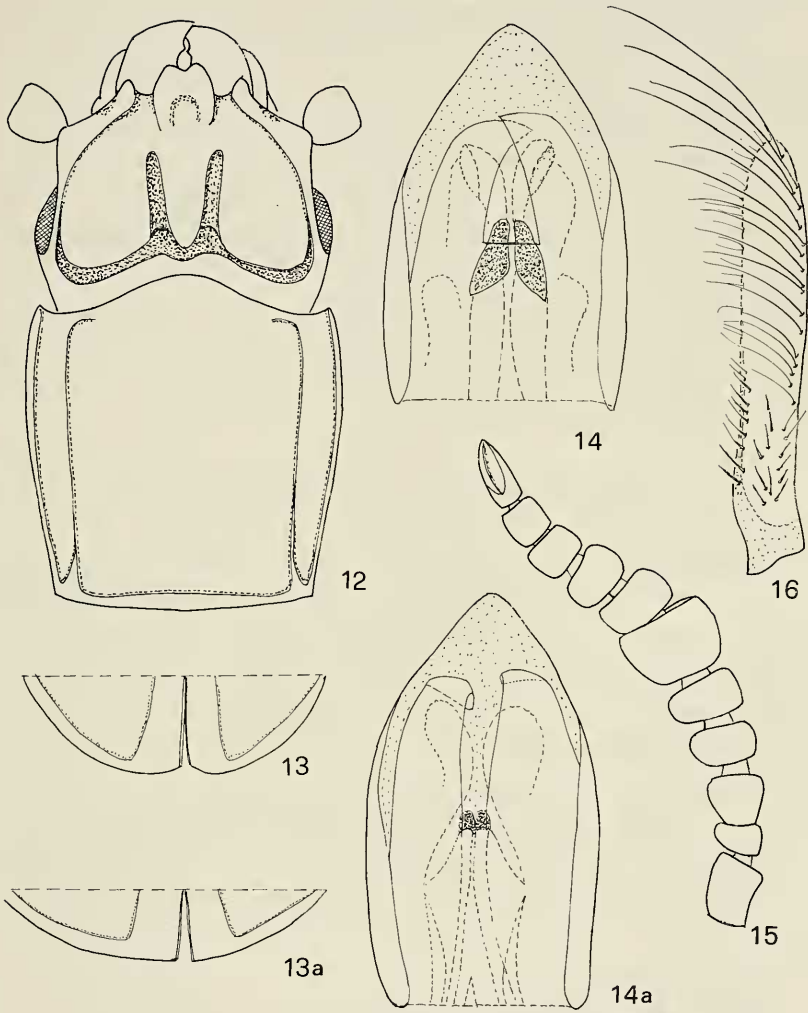
Taxonomic note

The genus *Passandra* as it is here delimited is considered as a monophyletic taxon based at least on two synapomorphic (autapomorphic) features: antennomeres III-X impressed or markedly grooved ventrally forming region filled with sensillae, and each segment possessing minute circular sensory areas laterally on dorsal side. These characters, and reduced elytral striae (which may also be considered as an autapomorphic character in addition to grooved as opposed to impressed, punctate lines) unite two otherwise structurally different species - *P. fasciata* of New World and *P. sexstriata* from Africa. *P. sexstriata* Dalman is the only member of the genus which does not have sublateral lines on the pronotum. If we consider complete sublateral lines on pronotum and complete admedian grooves of head as ancestral characters, all the remaining species would comprise a sister group to both these species (*fasciata* + *sexstriata*) which have one synapomorphy (lacking head admedian grooves). *P. sexstriata* may be further separated from *P. fasciata* because of reduced pronotal lines in the former. Thus, it is possible to elevate either both of these species or only *sexstriata* to a generic level (*Passandra*) and to treat the remaining species as *Hectarthrum*. Because our understanding of the character transformation series in Passandridae and their immature stages are far from sufficient for phylogenetic purposes, in addition to poorly studied closely related groups I believe it is better to retain *Passandra* as well defined genus than to divide it into insufficiently defined units.

Checklist of the species of *Passandra* Dalman

1. *Passandra apicalis* (Grouvelle, 1885).
2. *Passandra blanchardi* Grouvelle, 1876.
3. *Passandra doriai* (Grouvelle, 1883).
4. *Passandra elongatula* Grouvelle, 1874.
5. *Passandra fasciata* (Gray, 1832).
 - = *Passandra columbus* Newman, 1838, syn. n.
 - = *Passandra rubrolineata* Blanchard, 1843, syn. n.
 - = *Passandra brasiliensis* Chevrolat, 1844, syn. n.

- = *Passandra miles* J. Thomson, 1853, syn. n.
- = *Passandra mexicana* Casey, 1916, syn. n.
- 6. *Passandra gemellipara* (Newman, 1839).
 - = *Passandra smithi* (Murray, 1867).
- 7. *Passandra gigas* (Fabricius, 1801)
 - = *Passandra curtipes* (Newman, 1839).
- 8. *Passandra goudoti* (Grouvelle, 1876).
 - = *Passandra bilineata* (Reitter, 1878).
- 9. *Passandra harmandi* (Grouvelle, 1887).
 - = *Passandra bicolorata* Šlipinski, 1983, syn. n.
- 10. *Passandra heros* (Fabricius, 1801).
 - = *Hectarthrum brevifossum* Newman, 1839.
 - = *Hectarthrum bistratum* Castelnau, 1840.
 - = *Hectarthrum cylindricum* Smith, 1851.
 - = *Hectarthrum depressum* Smith, 1851, syn. n.
 - = *Hectarthrum australicum* C. O. Waterhouse, 1876.
 - = *Hectarthrum orientale* Schaufuss, 1887, syn. n.
 - = *Hectarthrum angustatum* Grouvelle, 1889, syn. n.
 - = *Passandra atra* Šlipinski, 1983, syn. n.
- 11. *Passandra kasiae* sp. n.
- 12. *Passandra lineicollis* (Reitter, 1880).
 - = *Passandra modesta* (Fairmaire, 1884).
- 13. *Passandra marginata* Grouvelle, 1877.
 - = *Passandra deyrollei* Grouvelle, 1885, syn. n.
- 14. *Passandra murrayi* (Grouvelle, 1876).
- 15. *Passandra nodicornis* (Snellen, 1864).
- 16. *Passandra oblongicollis* (Fairmaire, 1886).
 - = *Passandra longicollis* (Fairmaire, 1886).
- 17. *Passandra penicillata* (Waterhouse, 1876).
 - = *Passandra raffrayi* (Grouvelle, 1877).
- 18. *Passandra popeorum* sp. n.
- 19. *Passandra punctulicollis* (Fairmaire, 1891).
- 20. *Passandra quadrilineata* (Smith, 1851).
- 21. *Passandra rufipennis* (Fabricius, 1801).
- 22. *Passandra sagena* (Lefkovitch, 1963).



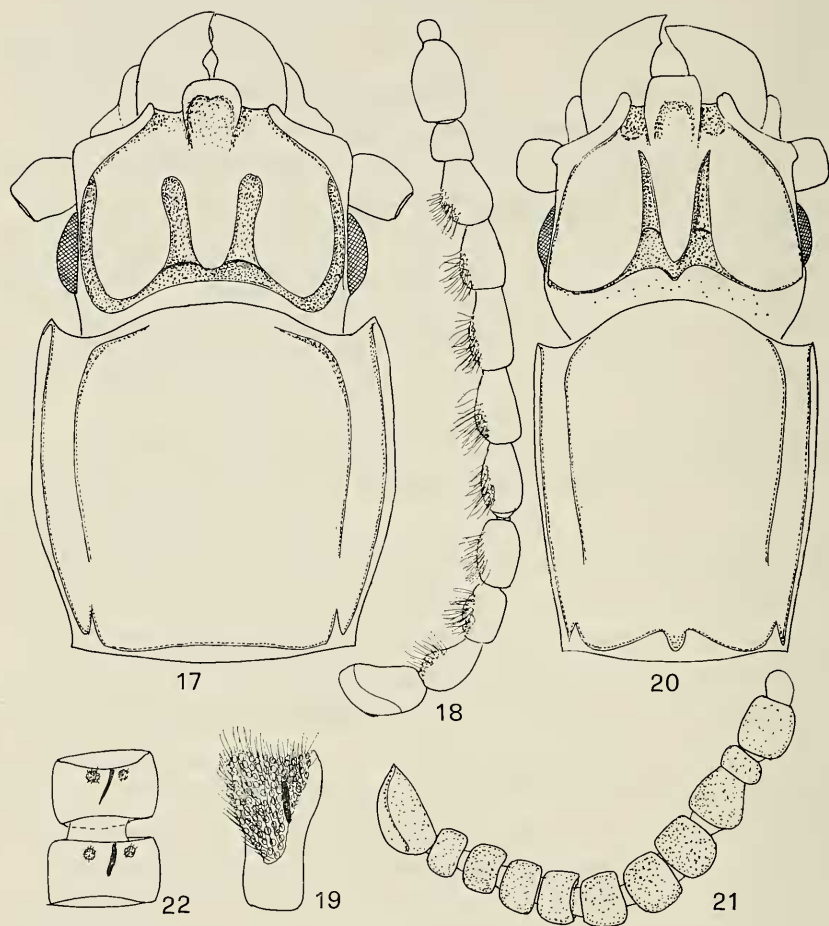
Figs 12-16. *Passandra* species: *gigas* (12-16); *waterhousei* (13a, 14a). 12: head and pronotum; 13, 13a: elytral apices; 14, 14a: median lobe, ventral; 15: antenna, male; 16: paramera, dorsal.

23. *Passandra semifusca* (Newman, 1839).
 24. *Passandra sexstriata* Dalman, 1817.
 25. *Passandra simplex* (Murray, 1867).
 = *Hectarthrum corticinum* Peringuey, 1886.
 = *Hectarthrum puncticeps* Grouvelle, 1915.
 26. *Passandra tenuicornis* (Grouvelle, 1913).
 27. *Passandra trigemina* (Newman, 1839).
 = *Hectarthrum latum* Grouvelle, 1874, syn. n.
 = *Hectarthrum sociale* Waterhouse, 1876, syn. n.
 = *Hectarthrum sociale* var. *minor* Waterhouse, 1876, syn. n.
 = *Hectarthrum dejectum* Waterhouse, 1876, syn. n.
 28. *Passandra uniformis* (Waterhouse, 1876).
 29. *Passandra waterhousei* Grouvelle, 1885.
 = *Passandra transvaalensis* Peringuey, 1888, syn. n.
 30. *Passandra zairensis* Ślipinski, 1983.

Key to the World species of *Passandra*

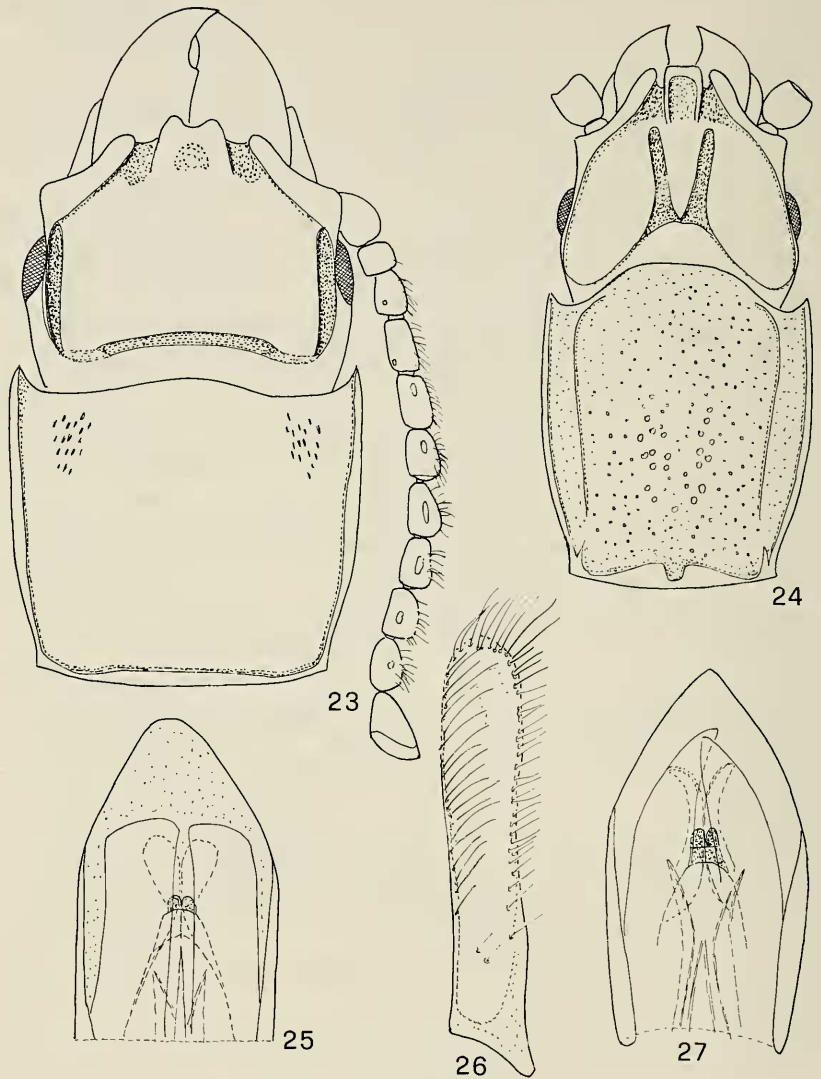
- 1 Sublateral lines of pronotum absent (fig. 23) (Africa)
 *sexstriata*, p. 596
 – Sublateral lines of pronotum present 2
 2 Each elytron only with two complete lines (I, VI) 3
 – Each elytron with at least three lines complete 14
 3 Sublateral lines of pronotum entire 4
 – Sublateral lines of pronotum interrupted basally 9
 4 Medial process of head reduced and does not reach transverse
 occipital groove (fig. 71) (New Guinea)..... *popeorum*, p. 591
 – Medial process of head well developed and reaches occipital
 groove 5
 5 Marginal groove at pronotal base straight or evenly curved
 medially (figs 7, 12) 6
 – Marginal groove at pronotal base with abrupt notch or deeply
 emarginate medially (figs 55, 63) 8
 6 Sublateral lines of pronotum prolonged anteriorly along ante-
 rior margin and almost joined medially (fig. 7) (Australia)
 *marginata*, p. 587

- Sublateral lines widely separated anteriorly and almost finishing when meeting the anterior edge (fig. 12) 7
- 7 Apices of elytra reddish and separately rounded to apico-sutural angle (fig. 13); male antenna thick and often with antennomeres V-VIII swollen; spermatheca as in fig. 60; aedeagus as in fig. 14 (Africa) *gigas*, p. 579
- Elytra uniformly black with apices together rounded (fig. 13a); antenna in both sexes relatively longer and slender; spermatheca as in fig. 57; aedeagus as in fig. 14a (Africa) *waterhousei*, p. 600
- 8 Pronotum with longitudinal mediobasal groove (fig. 63) (New Guinea) *doriai*, p. 573
- Pronotum without groove (fig. 55) (Indo-Australian) .. *heros*, p. 583
- 9 Medial process and admedian grooves on head almost invisible (fig. 11) (New World) *fasciata*, p. 575
- Medial process and admedian grooves well visible 10
- 10 Ventral side of antennomeres V-VIII with impressions and large, densely punctate and setose sensory areas (fig. 19) (Africa) *penicillata*, p. 590
- Ventral side of antennomeres V-IX glabrous and usually with larger grooves or impressions (figs 2, 82) 11
- 11 Antennomeres III-X about 2-3 x as long as wide. Marginal groove at base of pronotum evenly curved medially. Body relatively large and flattened (fig. 1) (Oriental) .. *elongatula*, p. 575
- Antennomeres III-X subquadrate or transverse. Marginal groove of pronotum with notch or emargination medially 12
- 12 Admedian grooves on head strongly divergent in frontal part (fig. 66); marginal groove of pronotum deeply emarginate medially; sublateral lines of pronotum extremely short (Madagascar) *goudoti*, p. 581
- Admedian grooves on head almost straight (fig. 50); marginal groove with simple notch medially; sublateral lines usually longer..... 13
- 13 Sublateral lines of pronotum joined anteriorly (fig. 50) and absent only at basal 1/8. Elytra reddish apically with line II sometimes marked medially. (Africa) *apicalis*, p. 570



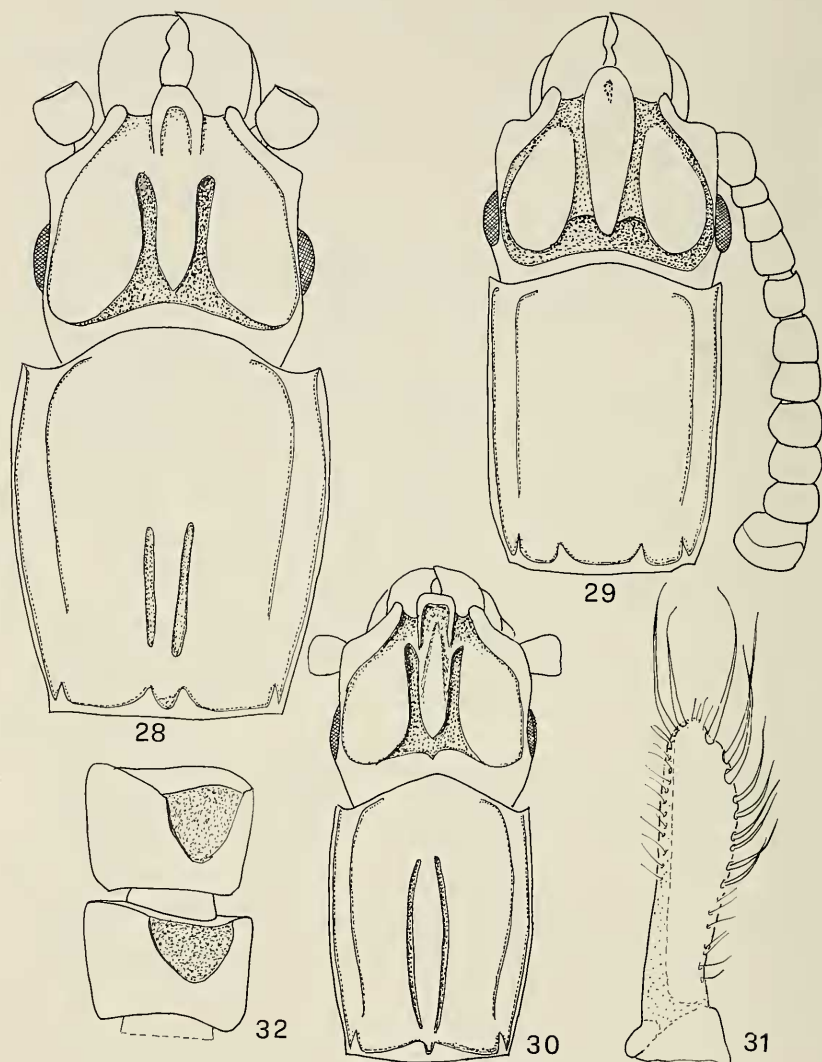
Figs 17-22. *Passandra* species: *penicillata* (17-19); *simplex* (20-22). 17, 20: head and pronotum; 18, 21: antenna; 19: antennomere IX, ventral; 22: antennomeres VIII and IX, ventral.

- Sublateral lines of pronotum reduced basally and anteriorly (fig. 79). Elytra uniformly black, line II absent, sometimes line V marked near base (Africa) *zairensis*, p. 600
- 14 Elytron with three complete lines (I, V, VI), line II never visible but rarely small basal pit 15
 - Elytron with four complete lines (I, II, V, VI), line II marked at least in 1/2 of elytron, usually almost complete 19
- 15 Antennomeres IV-VIII at least 1.3 x as long as wide, last one triangular (fig. 54) (Oriental) *blanchardi*, p. 572
 - Antennomeres IV-VIII subquadrate or transverse, last one never triangular (figs. 21, 29) 16
- 16 Marginal groove of pronotum curved or emarginate medially (figs 29, 83); antennomeres thick, last one ovoid, IV-X deeply emarginate ventrally (fig. 32) 17
 - Marginal groove of pronotum with simple notch medially (fig. 20); antennomeres slender, last one narrowly elongate, IV-X finely impressed ventrally (fig. 22) 18
- 17 Sublateral lines of pronotum joined anteriorly; marginal groove emarginate medially (fig. 83) (Africa) *murrayi*, p. 587
 - Sublateral lines of pronotum separated anteriorly; marginal groove curved, not emarginate (fig. 29) (Indo-Australian)
..... *trigemina*, p. 598
- 18 Pronotal disk with group of coarse punctures medially (fig. 24); head surface densely, rugosely punctured, almost mat (Africa) *oblongicollis*, p. 588
 - Pronotal disk finely and regularly punctured, almost smooth (fig. 20); head surface densely but not rugosely punctured, feebly shiny; at least medial process smooth and shiny (Africa)
..... *simplex*, p. 597
- 19 Sublateral lines on pronotum interrupted basally 20
 - Sublateral lines on pronotum entire 23
- 20 Pronotal disk with admedian grooves (fig. 28) 21
 - Pronotal disk without admedian grooves 22
- 21 Admedian grooves of pronotum long, continuing further forward than middle of pronotal length (fig. 30); head and anterior part of pronotum rugosely punctured, almost mat (Africa) *sagena*, p. 595



Figs 23-27. *Passandra* species: *sexstriata* (23, 26); *oblongicollis* (24, 25); *sagena* (27).
 23, 24: head and pronotum; 25, 27: median lobe ventral; 26: paramera, dorsal.

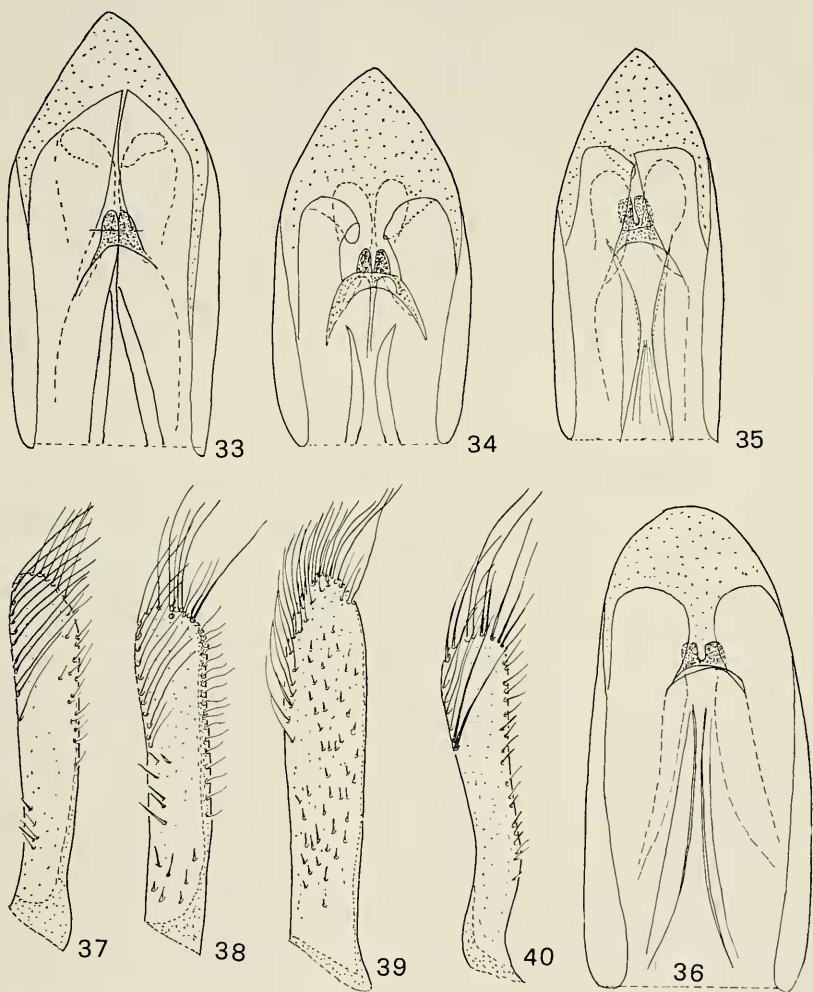
- Admedian grooves on pronotum short and present in basal half of pronotum only (fig. 28). Head and pronotum shiny and rather sparsely punctured, punctures feebly rugose only laterally and only in extremely small specimens (Africa) .. *gemellipara*, p. 578
- 22 Pronotal surface usually densely punctate except for narrow impunctate median strip. Head coarsely and rugosely punctured, mat. Elytra uniformly black with intervals obviously punctured (Africa) *punctulicollis*, p. 592
- Pronotal surface regularly micropunctured, sometimes with 3-7 larger punctures medially. Head sparsely punctured, shiny. Elytra with apices reddish and intervals not obviously punctured (Africa) *quadrilineata*, p. 594
- 23 Pronotal disc with two admedian lines (fig. 85); elytra with lines III and IV at least medially developed (fig. 84) (Africa) *lineicollis*, p. 585
- Pronotal disk without lines; elytral lines III and IV absent 24
- 24 Admedian grooves of head short and wide (figs 64, 97) 25
- Admedian grooves of head long and narrow (fig. 90) 26
- 25 Pronotal disk with group of coarse punctures medially (fig. 97); clypeus wide, distinctly bordered laterally; antenna with antennomere II transverse, glabrous on ventral sides (Oriental) *nodicornis*, p. 588
- Pronotal disk uniformly punctured (fig. 64); clypeus flat, not bordered laterally; antenna with antennomere II subquadrate and segments III-X densely setose ventrally (fig. 65) (Oriental) *kasiae*, p. 584
- 26 Pronotal disk uniformly micropunctured, without group of coarse punctures medially. Antenna slender and antennomeres markedly longer than wide (fig. 106); general form larger and more flattened 27
- Pronotal disk at least with group of coarse punctures medially. Antenna comparatively shorter with antennomeres IV-VIII subquadrate, often transverse (at least one of them); body generally smaller, narrower sometimes subcylindrical 28
- 27 Uniformly black. Marginal groove of pronotum straight medially (fig. 78) (Ceylon) *uniformis*, p. 599



Figs 28-32. *Passandra* species: *gemellipara* (28); *trigemina* (29, 32); *sagena* (30); *doriai* (31). 28, 29, 30: head and pronotum; 31: paramera, dorsal; 32: antennomeres IX, X, ventral.

- Bicoloured, head and pronotum much darker than elytra, elytra usually brown or reddish. Marginal groove of pronotum emarginate medially (Laos, Burma) *harmandi*, p. 581

28 Sublateral lines of pronotum joined anteriorly along the anterior edge (fig. 49); prosternal process expanded apically



Figs 33-40. *Passandra* species: *punctulicollis* (33, 38); *gemellipara* (34, 37); *quadri-lineata* (35, 40); *goudoti* (36, 39). 33-36: median lobe, ventral; 37-40: paramera, dorsal.

- (fig. 86). Head and pronotum black or piceous-black, elytra castaneous; pronotal disk with group of very large and deep punctures medially (Oriental) *rufipennis*, p. 594
- Sublateral lines of pronotum widely separated anteriorly, never joined; prosternal process narrower and more parallelsided (fig. 87). Head and pronotum brown, usually not contrasting with the elytral colour if at all. Pronotal punctures much finer 29
- 29 Admedian grooves of head wide and almost straight (fig. 107); marginal groove of pronotum more strongly emarginate medially (fig. 76). Body usually brown, uniform. Pronotal punctures scarce and sometimes almost absent. (Oriental) .. *tenuicornis*, p. 598
- Admedian grooves of head much narrower and divergent (fig. 90); marginal groove of pronotum less strongly emarginate medially (fig. 77). Pronotum usually darker than elytra (Oriental) *semifusca*, p. 595

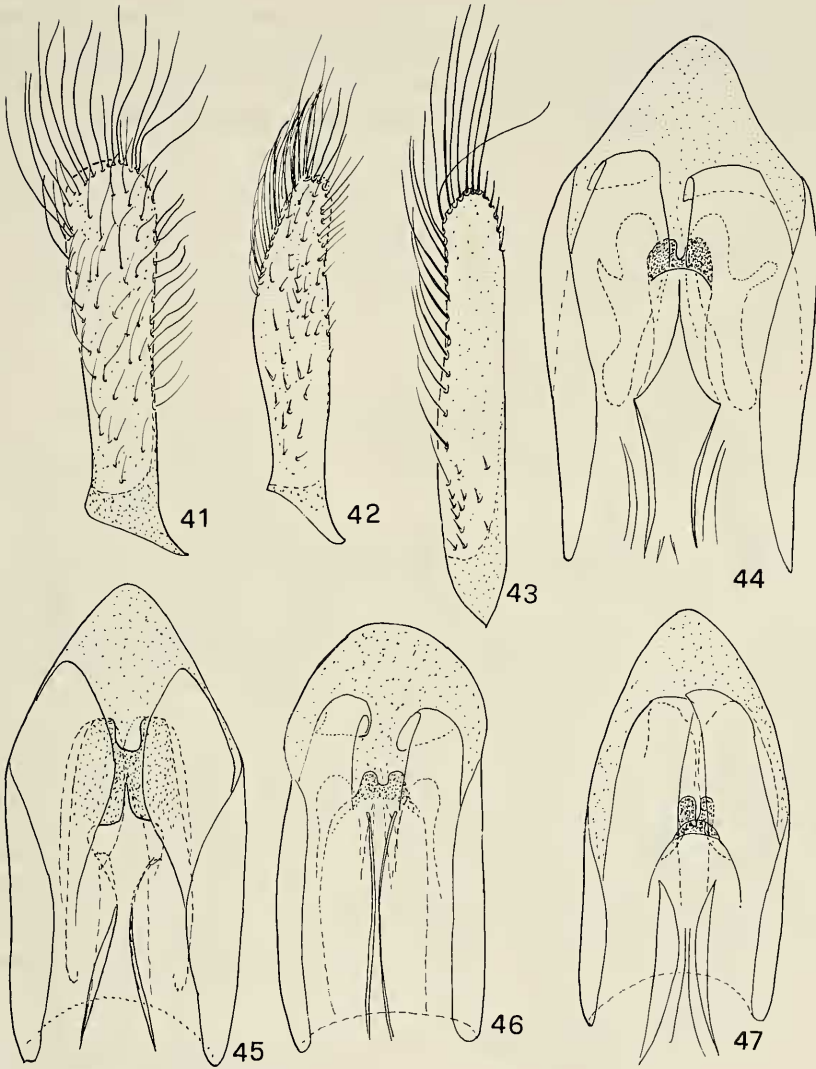
***Passandra apicalis* (Grouvelle) (Figs 50, 51, 56)**

Hectarthrum apicale Grouvelle, 1885: XXXII. Holotype: Senegal, MNHN, examined.
- Lefkovitch, 1963: 188. - In *Passandra*: Slipinski, 1983: 82.

Diagnostic combination. Narrowly elongate, subcylindrical; colour black, only elytral apices reddish; surfaces shiny. Head with sublateral carinae not joined to occipital groove, which is reduced (fig. 50); admedian grooves moderately long, closed anteriorly; medial process narrow, subacuminate apically, slightly carinate dorsally, that carina prolonged anteriorly and enters clypeal region; surface sparsely punctured except for temples which are rather rugosely punctured, all shiny. Antenna slender with antennomeres narrowly grooved ventrally (fig. 51). Pronotum narrow with sublateral lines narrowly interrupted basally and joined anteriorly; marginal groove deeply notched medially; disk shiny, micropunctured. Elytra with two lines complete (I, VI), line II visible near middle. Male not examined. Spermatheca as in fig. 56. Length 18 mm.

Material examined: 2 specimens (MNHN, IZPAN).

Distribution: Senegal, Zaire.

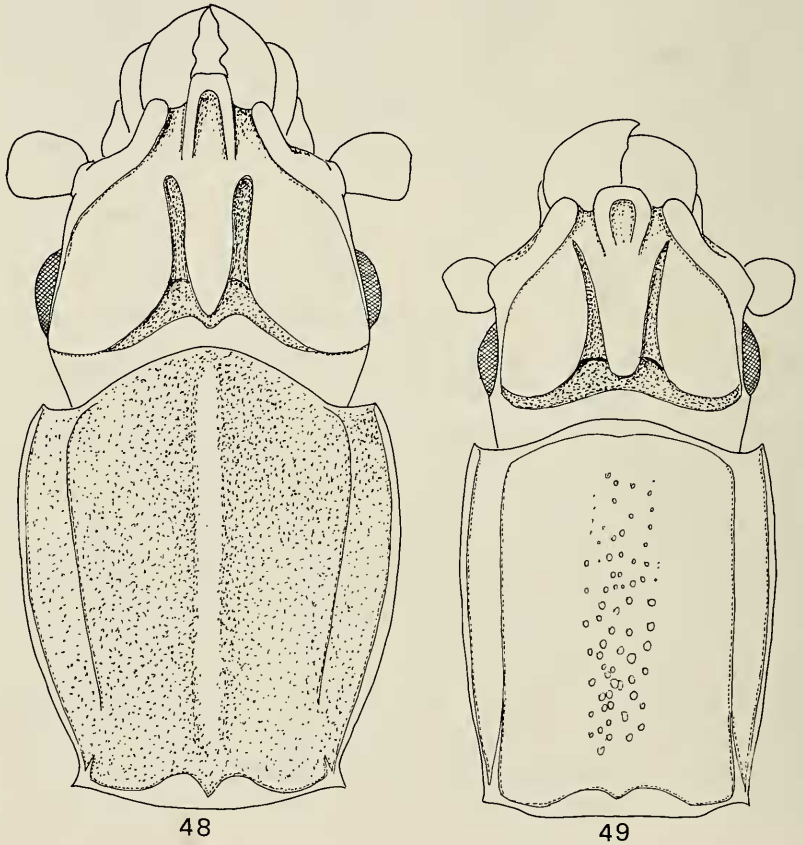


Figs 41-47. *Passandra* species: *penicillata* (41, 45); *murrayi* (42, 46); *simplex* (43, 47); *sexstriata* (44). 41-43: paramera, dorsal; 44-47: median lobe, ventral.

***Passandra blanchardi* Grouvelle (Figs 4-6, 54)**

Passandra Blanchardi Grouvelle, 1876: CCXVII. Holotype: Philippines, MNHN, examined.

Diagnostic combination. Broadly-oval, flattened; colour uniformly black; surfaces shiny. Head with sublateral grooves and carinae clearly joined to transverse occipital ones, grooves wide; admedian grooves long and deep, almost straight; medial process triangular, subacuminate



Figs 48, 49. *Passandra* species, head and pronotum: *puncticollis* (48); *rufipennis* (49).

apically, flat. Antenna long and slender (fig. 54), last antennomere triangular; ventral sides of antennomeres glabrous with wide grooves. Pronotum (fig. 4) with sublateral lines interrupted in basal 1/3, continuing anteriorly but not joined; marginal groove almost straight medially; disk micropunctured. Elytra with three lines complete (I, V, VI), sometimes the lateral line (VII) barely traceable. Apical piece of median lobe as in fig. 5, paramera as in fig. 6. Length 18-35 mm.

Holotype data « Mus. Paris coll. A. Grouvelle 1915 (1584.75) *Passandra Blanchardi* A. Grouv. ».

Material examined: 10 specimens (MNHN, IZPAN, ZMB, MSNG).

Distribution: Philippines (Luzon); Borneo; Sumatra.

***Passandra doriai* (Grouvelle) comb. n. (Figs 31, 52, 63)**

Hectarthrum Doriae (sic!) Grouvelle, 1883: 275. Lectotype ♂, present designation, New Guinea, MSNG, examined.

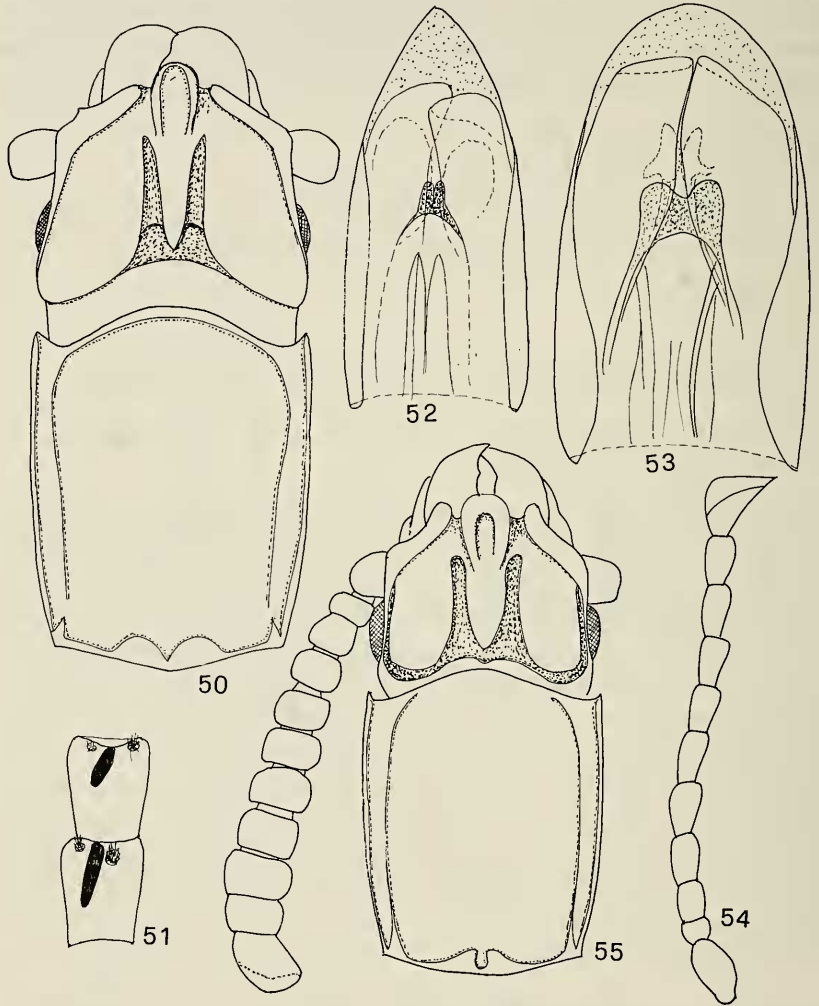
Diagnostic combination. Narrowly elongate, subcylindrical; colour black; surfaces shiny. Head with sublateral and occipital grooves well developed, joined; admedian grooves moderately deep, closed anteriorly; median process narrowly triangular, rounded apically, flat; clypeus weakly concave, not clearly bordered laterally. Antenna (fig. 63) short and thick, in male antennomere VIII strongly dilated, IX transverse, in female antennomeres subquadrate or slightly transverse, none dilated, impressions on ventral side very limited, narrow. Pronotum with sublateral lines complete and slightly prolonged anteriorly, not joined; marginal groove deeply and broadly emarginate medially; mediobasal groove in both sexes deep and extending from base to middle of pronotum (fig. 63). Elytra with only 2 lines complete (I, VI), intervals impunctate. Apical piece of median lobe as in fig. 52; paramera as in fig. 31. Length 12-15 mm.

Lectotype data: « Nuova Guinea Katau 75, L.M. D'Albertis / *Hectarthrum Doriae* Grouv. Typ ».

Paralectotypes: same data as lectotype (1 ♀ MSNG; 1 ♂ MNHN).

Material examined: 3 specimens from type serie (MSNG; MNHN).

Distribution: New Guinea.



Figs 50-55. *Passandra* species: *apicalis* (50, 51); *doriai* (52); *elongatula* (53); *blanchardi* (54); *heros* (55). 50, 55: head and pronotum; 51: antennomeres VIII, IX, ventral; 52, 53: median lobe, ventral; 54: antenna.

Passandra elongatula Grouvelle (Figs 1-3, 53)

Passandra elongatula Grouvelle, 1874: XXVII. Lectotype, present designation: Malacca, MNHN, examined.

Diagnostic combination. Body broadly-oval, flattened, shiny; colour uniformly dark-brown to black. Head with sublateral and occipital grooves wide, deep and joined; admedian grooves moderately long, shallow; median process wide, flat, triangular, rounded apically (fig. 1); clypeus emarginate medially, shallowly concave. Antenna with antennomeres III-X about 2 x as long as wide, ventrally glabrous and grooved (fig. 2). Pronotum with sublateral lines widely interrupted basally, not joined anteriorly, widely separated; marginal groove almost straight medially; disk micropunctured. Elytra with only two lines complete (I, VI) intervals micropunctured. Apical piece of median lobe as in fig. 53, paramera as in fig. 3. Length 12-23 mm.

Lectotype data « Malacca / Mus. Paris coll. A. Grouvelle / *Passandra elongatula* A. Grouv. / 27 ».

Material examined: + 50 specimens (BMNH, MNHN, MHNG, NHMV, IZPAN, DEI, ZMB).

Distribution: Java, Sumatra, Philippines, Moluques.

Passandra fasciata (Gray, 1832) (Figs 11, 93, 94)

Parandra fasciata Gray in Griffith, 1832: 93. Lectotype, present designation: Cuba?, BMNH, examined. - In *Passandra*: Newman, 1839: 391.

Passandra Columbus Newman, 1838: 398. Lectotype, present designation: Brazil, BMNH, examined. Syn. n.

Passandra rubrolineata Blanchard, 1843: 205. Type(s): Brazil, not examined, Syn. n.

Passandra brasiliensis Chevrolat, 1844: 202. Types: Brazil, lost ?, not examined. Syn. n.

Passandra miles J. Thomson in Lacordaire, 1853: 9, t. 21, f. 5. Type(s) « Gabon », not examined, Syn. n.

Passandra mexicana Casey, 1916: 113. Lectotype, present designation: Mexico, USNM, examined. Syn. n.

Diagnostic combination. Body broadly-oval, flattened; surfaces shiny; colour variable but usually reddish-brown to dark-brown with wide darker strip along elytral suture; usually smaller specimens and specimens from West Indiae and Central America are lighter than those from Brazil and Argentina; specimens entirely reddish-brown or almost black rare but present. Head with sublateral and occipital grooves deep and well developed, joined (fig. 11); admedian grooves and medial process not defined, sometimes the grooves finely impressed. Antenna

long, slender, antennomeres III-X usually 2-3 x as long as wide, ventrally with narrow impression, glabrous. Pronotum with sublateral lines absent in basal 1/4, not continuing along anterior margin; marginal groove almost straight medially. Surface micropunctured, shiny. Elytra with only two complete lines (I, VI); intervals smooth. Apical piece of median lobe as in fig. 94, paramera as in fig. 93. Length 10-28 mm.

Type data:

Lectotype of *P. fasciata* «40,41.1150 / Type / *fasciata* Gray».

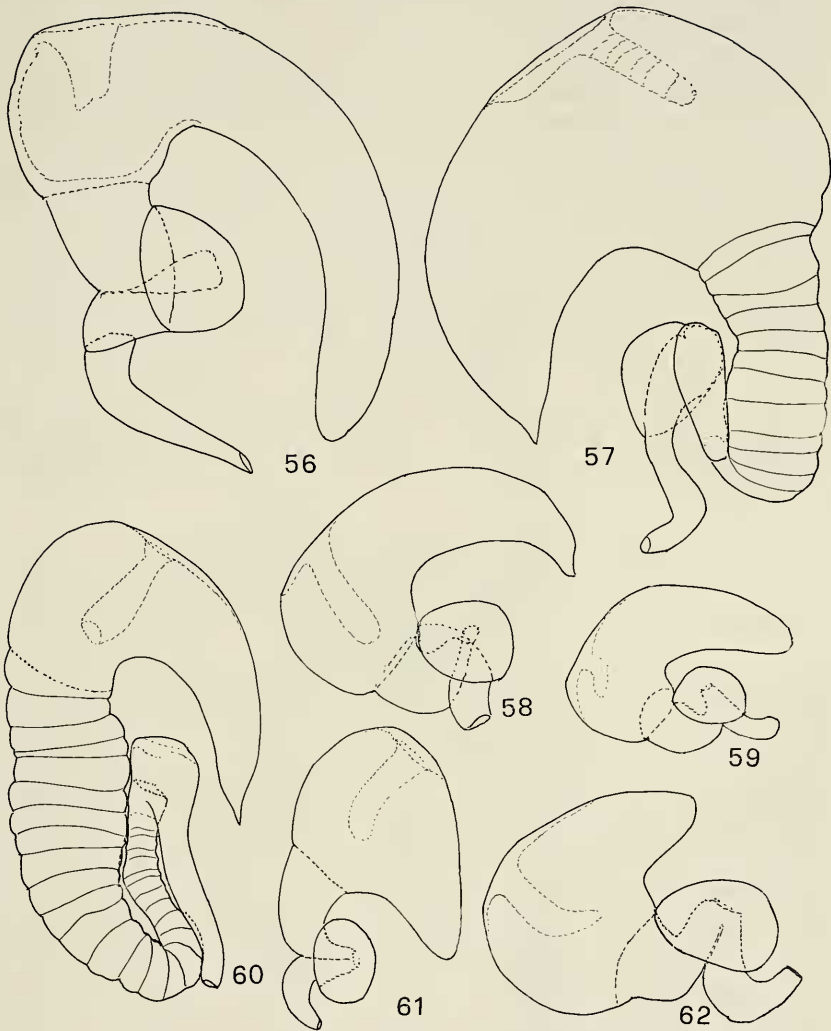
Lectotype of *P. columbus* «Type / *Passandra Columbus* New. Type / Ent. Club. 44-12».

Lectotype of *P. mexicana* «49160 USNM / *Passandra mexicana* Casey».

Material examined: + 150 specimens (BMNH, MNHN, MHNG, FSCA, IRSNB, IZPAN, DEI, MCZ, NHMB, USNM, ZMB).

Distribution: Central and South America (Cuba, Mexico, to Argentina and Peru).

Remarks. Unfortunately the type specimens of three species - *P. brasiliensis*, *P. rubrolineata* and *P. miles* have not been discovered, but there is almost no doubt about the synonymy proposed above, because: (1) all the New World specimens examined from various collections under those names turned to be only one variable species; (2) in many old, historical collections the species has been labelled as *miles*, *columbus* or *brasiliensis*, e.g. in M. Gory collection (MHNG) there is single specimen labelled «*Miles* Schön., *Brasiliensis* Chevr. Bresil», a similar specimen is in Grouvelle collection «coll. Dejean, *Passandra* Dalm. *miles* Schn. Bresil»; (3) from the colour figure in the Lacordaire's Atlas it is apparent that «*P. miles*» has well developed but interrupted sublateral lines on pronotum and only two lines on each elytron, the elytra seems to be bicoloured, with darker sutural region; all those characters are apparently that of *P. fasciata* and the erroneous patria «Gaboon» appeared in HETSCHKO, (1930), the original patria on p. 9 is «*Passandra miles* Thoms. Guinée» also erroneous, and the species is apparently native to the New World; (4) the original description of *P. rubrolineata* and many specimens from various collections under that name leave no doubt about the synonymy of that species with *P. fasciata*.



Figs 56-62. *Passandra* species, spermatheca: *apicalis* (56); *waterhousei* (57); *sagena* (58); *zairensis* (59); *gigas* (60); *simplex* (61); *oblongicollis* (62).

***Passandra gemellipara* (Newman) (Figs 28, 34, 37)**

Hectarthrum gemelliparum Newman, 1839: 395. Lectotype: Senegal, in Hope Dep. Ent., designated and examined by Lefkovitch, 1963: 186. - In *Passandra*: Slipinski, 1983: 86.

Hectarthrum Smithii Murray, 1867: 339. Holotype: Old Calabar, BMNH, examined. - Waterhouse, 1876: 126.

Diagnostic combination. Body moderately convex to subcylindrical; colour deeply black, surfaces shiny. Head with sublateral grooves

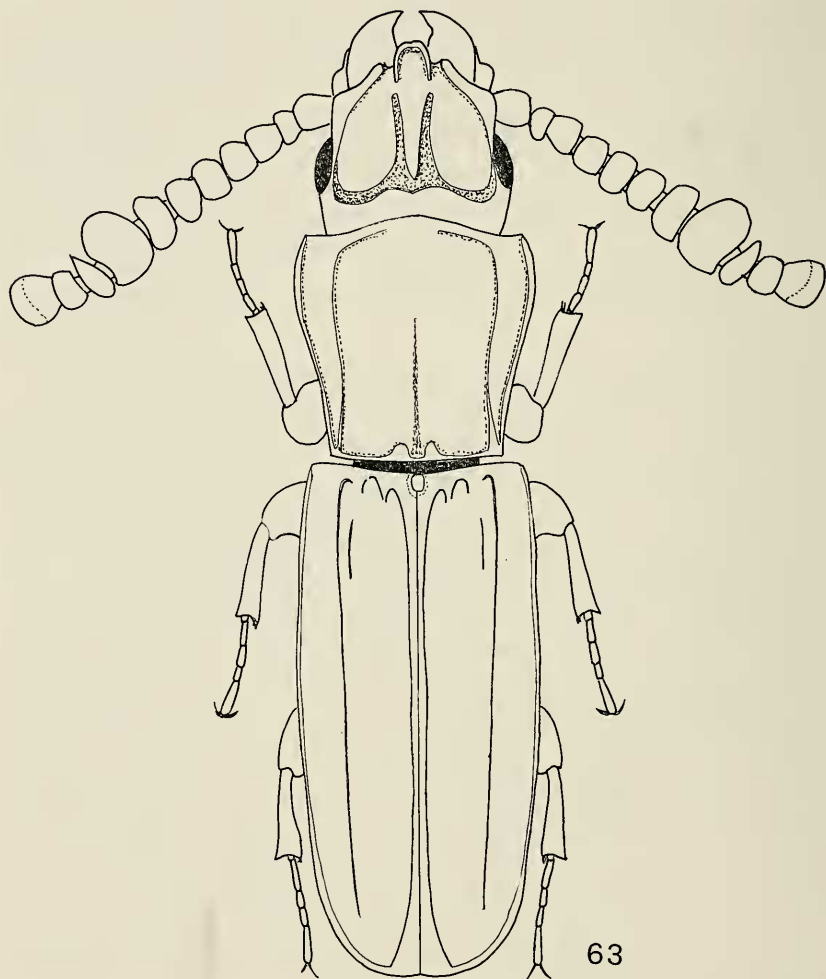


Fig. 63. *Passandra doriai*, male.

reduced to simple carina not clearly joined to occipital groove, which is somewhat reduced (fig. 28); admedian grooves straight, closed anteriorly; medial process almost parallel-sided weakly acuminate apically, carinate dorsally, carina anteriorly enters clypeal region; clypeus emarginate apically, bordered. Antenna moderately long, antennomeres subquadrate, narrowly impressed ventrally. Head surface moderately densely punctured, in smaller specimens lateral punctures somewhat rugose; surface shiny to moderately shiny. Pronotum with admedian lines deep and diverging anteriorly, as long as 0.5 pronotal length or less than that; sublateral lines narrowly interrupted near base, not joined anteriorly; marginal groove notched medially; pronotal disk finely micro-punctured. Elytra with four complete lines (I, II, V, VI); intervals smooth. Apical piece of median lobe as in fig. 34, paramera as in fig. 37. Length 10-19 mm.

Material examined: 36 specimens (BMNH, IZPAN, DEI, EMLU, IRSNB, MRAC, MNHN, MHNG, USNM, ZMB).

Distribution: Senegal, Gambia, Cameroon, Sudan, Zaire, Kenya.

***Passandra gigas* (Fabricius) (Figs 12-16, 60)**

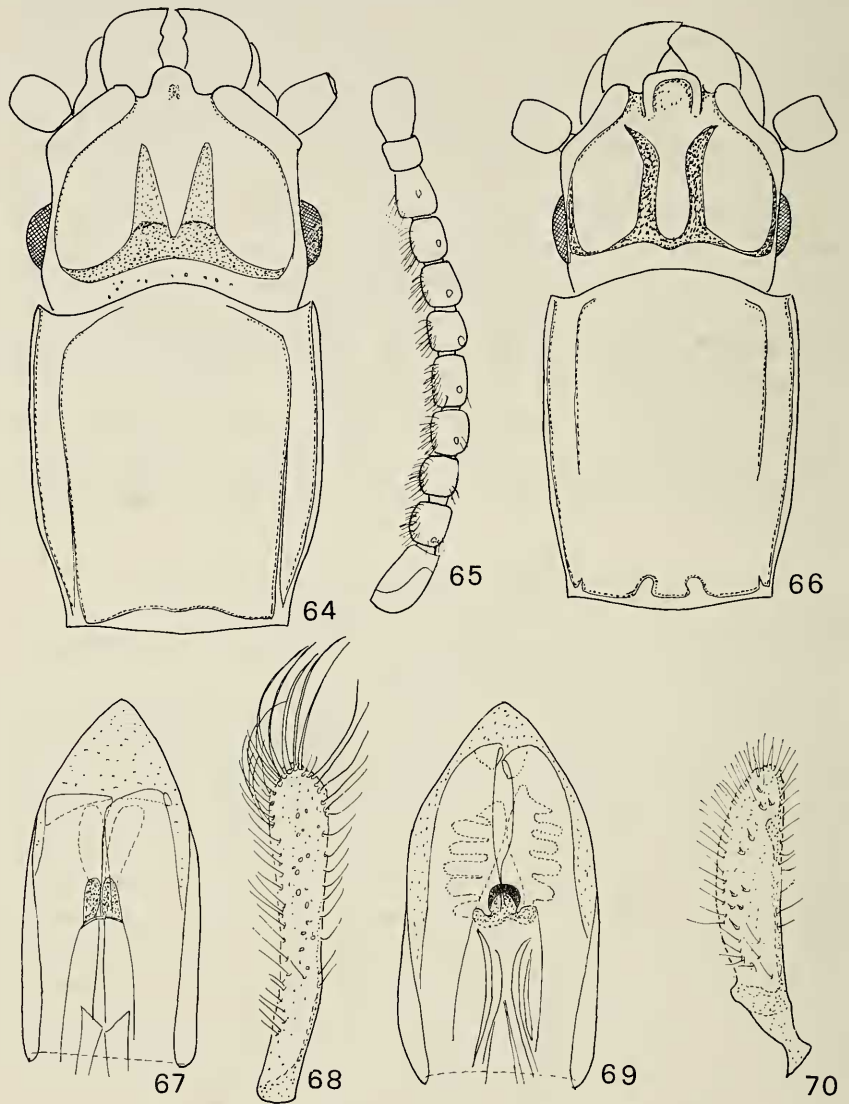
Cucujus gigas Fabricius, 1801: 92. Types not examined.

Hectarthrum curtipes Newman, 1838: 398. Holotype: Gambia, BMNH, examined. - Lefkovitch, 1963: 186; Slipinski, 1983: 87.

Diagnostic combination. Body moderately convex, elongate; surfaces shiny, colour variable, usually black with elytral apices, tibiae and femora reddish; rarely entirely black. Head with sublateral and occipital grooves well developed and joined (fig. 12); admedian grooves shallow, slightly diverging anteriorly; medial process flat, widely rounded apically. Antenna in both sexes stout and rather short, in male (fig. 15) often with antennomeres VI, VI strongly dilated, ventral impressions narrow, glabrous. Pronotum with sublateral lines entire, widely separated anteriorly; marginal groove almost straight medially; disk micro-punctured. Elytra only with two entire lines (I, VI), each elytron separately rounded to apicosutural angle (fig. 13). Apical piece of median lobe as in fig. 14, paramera as in fig. 16, spermatheca as in fig. 60. Length 8-21 mm.

Material examined: + 120 specimens (BMNH, DEI, EMLU, IRSNB, IZPAN, MHNG, MNHN, NHMB, NHMV, SMD, TMB, TMP, USNM, ZMB).

Distribution: Africa south of the Sahara.



Figs 64-70. *Passandra* species: *kasiae* (64, 65); *goudoti* (66); *lineicollis* (67, 68); *zairensis* (69, 70). 64, 66: head and pronotum; 65: antenna; 67, 69: median lobe, ventral; 68, 70: paramera, dorsal.

Passandra goudoti (Grouvelle) (Figs 36, 39, 66)

Hectarthrum Goudoti Grouvelle, 1876: CCXIII. Syntype(s) Madagascar, not examined. -
In *Passandra*: Ślipinski, 1983: 89.

Hectarthrum bilineatum Reitter, 1879: 186. Holotype, Madagascar, ZMB, examined.

Diagnostic combination. Uniformly black, subcylindrical; surfaces strongly shiny. Head with sublateral and occipital grooves well developed and joined; admedian grooves moderately deep and strongly divergent anteriorly (fig. 66); medial process narrowed anteriorly then obtusely rounded apically; clypeus deeply impressed. Antenna thick and short with antennomeres transverse, widely grooved ventrally. Pronotum with sublateral lines extremely short, present only in anterior 1/3-1/4, not continuing along anterior edge; marginal groove deeply emarginate medially; disk smooth or micropunctured. Elytra only with 2 complete lines (I, VI) intervals smooth. Apical piece of median lobe as in fig. 36, paramera as in fig. 39. Length 8-15 mm.

Lectotype of *H. bilineatum*: «Madagascar, *bilineatum* Reitt.*/Zool. Mus. Berlin».

Material examined: + 70 specimens (DEI, MNHN, NHMV, IZPAN, ZMB).

Distribution: Madagascar.

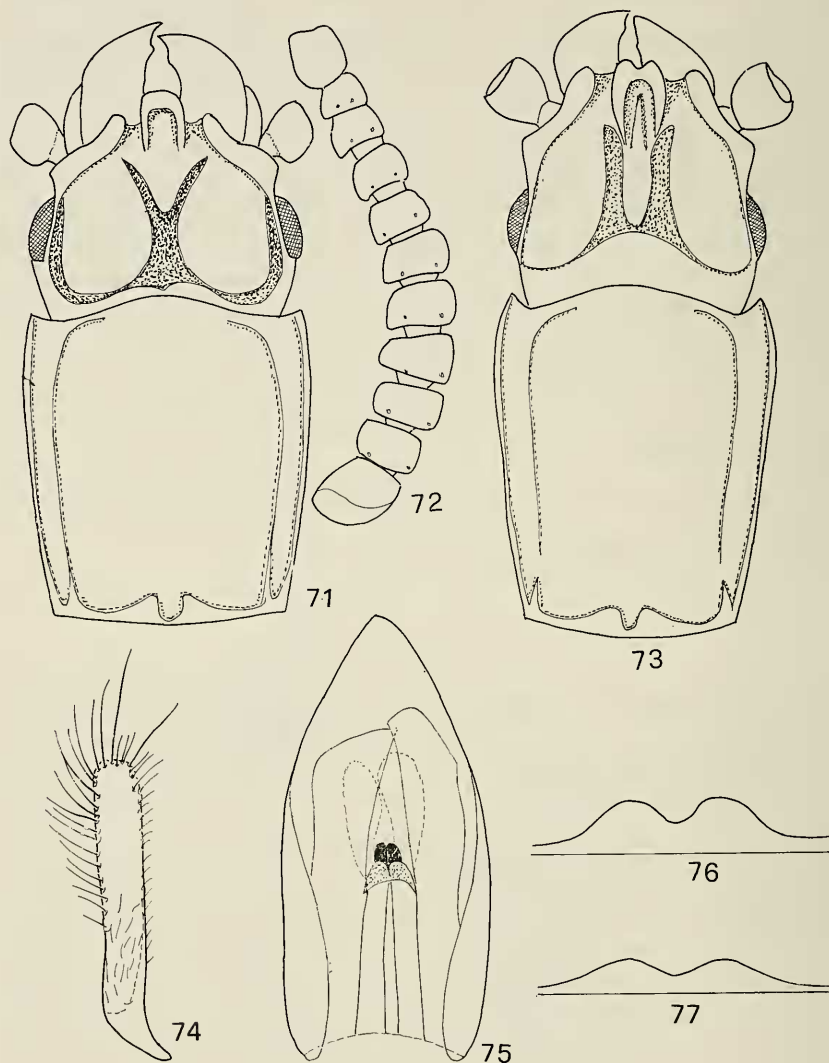
Passandra harmandi (Grouvelle) comb. n. (Figs 92, 95, 105, 106, 108)

Hectarthrum Harmandi Grouvelle, 1887: CLXXIX. Lectotype, present designation: Cambodia, MNHN, examined.

Passandra bicolorata Ślipinski, 1983: 85. Holotype «Kenya». MRAC, examined. Syn. n.

Diagnostic combination. Moderately convex, flattened dorsally; bicoloured, dark-brown to black with elytra apparently lighter, brown to reddish; surfaces shiny. Head with sublateral and occipital grooves well developed and clearly joined; admedian grooves deep, diverging anteriorly, closed (fig. 105); medial process triangular, rounded apically; surfaces micropunctured, shiny. Antenna relatively long, slender with antennomeres III-X markedly longer than wide (fig. 106). Pronotum with sublateral lines entire, widely separated anteriorly, not joined; marginal groove emarginate medially; disk regularly micropunctured, very rarely with a few larger punctures medially. Elytra with four complete lines (I, II, V, VI); intervals micropunctured. Apical piece of

median lobe as in fig. 95, paramera as in fig. 92, spermatheca as in fig. 108. Length 14-21 mm.



Figs 71-77. *Passandra* species: *popeorum* (71, 72); *quadrilineata* (73); *nodicornis* (74); *tenuicornis* (75, 76); *semifusca* (77). 71, 73: head and pronotum; 72: antenna; 74: paramera, dorsal; 75: median lobe, ventral; 76, 77: basal marginal groove of pronotum.

Lectotype of *P. harmandi*: « 570/78/ *Hectarthrum Harmandi* A. Grouvelle » Paralectotype with same data as lectotype, both in MNHN, general coll.; with accession number 570/78 there is in a register-book the following note « both specimens given to MNHN collection by Mr. Harmand, both come from La Khore, Cambodia ».

Material examined: 32 specimens (MNHN, BPBM, IRSNB, ZMB).

Distribution: Sumatra, Laos, Vietnam, Malacca.

Remark. Although the holotype of *P. bicolorata* is labelled « Kenya, Nairobi » there is no doubt a mistake in labelling, similar to *P. trigemina* (p. 598), and the species is identical with *P. harmandi*.

Passandra heros (Fabricius) comb. n. (Figs 55, 99, 100)

Cucujus heros Fabricius, 1801: 92. Types not examined.

Hectarthrum brevifossum Newman, 1839: 392. Holotype: Java, BMNH, examined.

Hectarthrum bistriatum Castelnau, 1840: 384. Type not examined.

Hectarthrum cylindricum Smith, 1851: 12. Holotype: South Australia, BMNH, examined.

Hectarthrum depressum Smith, 1851: 20. Lectotype, present designation: India, BMNH, examined. Syn. n.

Hectarthrum australicum Waterhouse, 1876: 119. Holotype: North Australia, BMNH, examined.

Hectarthrum orientale Schaufuss, 1877: 115. Lectotype, present designation: Celebes, Bouthian, ZMB, examined. Syn. n.

Hectarthrum angustatum Grouvelle, 1889: XXXIII. Holotype: Andaman Islands, MNHN, examined, Syn. n.

Passandra atra Slipinski, 1983: 83. Holotype: « Zaire » NHMB, examined, Syn. n.

Diagnostic combination. Body shape variable from narrow and almost cylindrical to broadly-oval and flattened; colour black rarely dark-brown; surfaces shiny. Head (fig. 55) with sublateral and occipital grooves well developed and joined; antenna thick with antennomeres subquadrate or transverse, ventrally with very narrow, linear impression. Pronotum with sublateral lines entire, not joined anteriorly; marginal groove with notch or narrow emargination medially. Elytra with only two lines complete (I, VI), sometimes lines V and VII barely traceable near bases. Apical piece of median lobe as in fig. 100, paramera as in fig. 99. Length 5-22 mm.

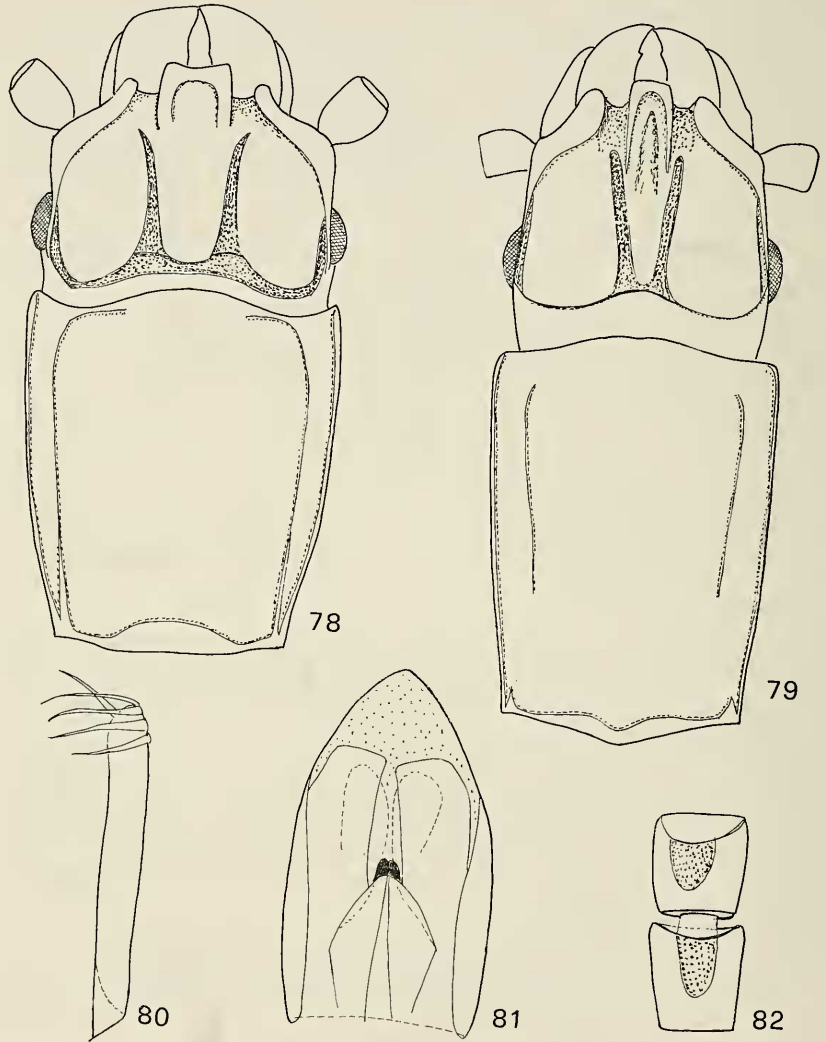
Material examined: 600 specimens from all collections.

Distribution: Indo-Australian from Southern China, Sikkim, Taiwan and India to South Australia.

Remark. The three specimens from Africa on which the original description of *P. atra* was based had been introduced to Africa or mislabelled, and all of them come from an old collection.

***Passandra kasiae* sp. n.** (Figs 64, 65)

Diagnostic combination. Dark-brown, unicoloured, narrowly elongate, moderately depressed, surfaces shiny. Head with sublateral groove



Figs 78-82. *Passandra* species: *uniformis* (78); *zairensis* (79, 82); *rufipennis* (80, 81). 78, 79: head and pronotum; 80: paramera, dorsal; 81: median lobe, ventral; 82: antennomeres IX, X, ventral.

reduced to a carina and not clearly joined to wide occipital groove; admedian grooves relatively short, wide and straight (fig. 64); median process flat, obtusely rounded apically; clypeus flat, not bordered, with fine median impression; surfaces densely micropunctured, laterally spaces reticulate, feebly shiny. Antenna moderately long, slender, ventral sides of antennomeres III-X with narrow groove and sensory area as in *penicillata*, but setae slightly sparser and shorter (fig. 65). Pronotum with sublateral lines entire and shortly continuing along the anterior edge, not joined; marginal groove straight medially; pronotal disk regularly micropunctured with 6 larger punctures medially. Prosteron process narrow, almost parallelsided. Elytra with 4 lines complete (I, II, V, VI), no traces of line VII; intervals smooth. Length 9.5 mm.

Material examined: Holotype (Thailand) « Siam, G. Lewis, coll. B.M. 1910-248 » (BMNH).

Distribution: Thailand.

Dedicated to my wife - Kasia G. Winiszewska-Ślipinska.

***Passandra lineicollis* (Reitter) (Figs 84, 85)**

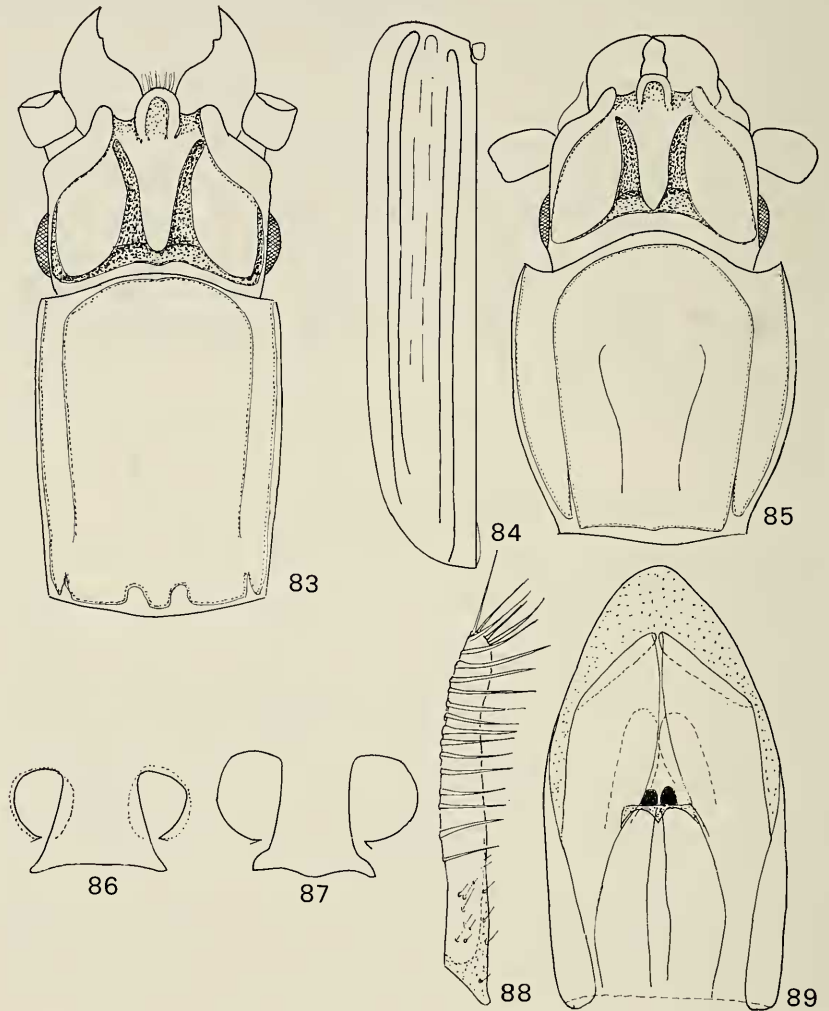
Hectarthrum lineicolle Reitter, 1880: 31. Holotype: Senegal, MNHN, examined. - In *Passandra* Ślipinski, 1983: 90.

Hectarthrum modestum Fairmaire, 1884: CXXI. Holotype: Guelidi, MNHN, examined - Grouvelle, 1887: CXXIX.

Diagnostic combination. Broadly-oval, flattened, black; surfaces feebly shiny, densely punctured. Head with sublateral grooves reduced to a carina which is not clearly joined to occipital groove; admedian grooves moderately deep, wide and divergent anteriorly; median process narrow, flat, acute apically; head surface except for grooves densely and rugosely punctured, mat; eyes comparatively small. Antenna slender, moderately long, with antennomeres III-IX subquadrate, ventrally with narrow linear impression, glabrous. Pronotum densely punctured, feebly shiny; sublateral lines entire and joined anteriorly; admedian lines long and converging basally, rarely composed of separate punctures; marginal groove almost straight, weakly emarginate medially. Elytra with four entire lines (I, II, V, VI) and with lines III and IV more or less developed, but never complete (fig. 84); intervals micropunctured, shiny. Length 8-13 mm.

Material examined: 32 specimens (BMNH, IZPAN, MNHN, MRAC, DEI, USNM, ZMB).

Distribution: East and Central Africa.



Figs 83-89. *Passandra* species: *murrayi* (83); *lineicollis* (84, 85); *rufipennis* (86); *tenuicornis* (87); *uniformis* (88, 89). 83, 85: head and pronotum; 84: left elytron; 86, 87: prosternal process (diagrammatic); 88: paramera, dorsal; 89: median lobe, ventral.

Passandra marginata Grouvelle (Figs 7, 10)

Passandra marginata Grouvelle, 1877: CLIX. Lectotype; present designation: Australia, MNHN, examined.

Passandra Deyrollei Grouvelle, 1885: XXXI. Lectotype, present designation: Australia, MNHN, examined. Syn. n.

Diagnostic combination. Broadly-oval, flattened; colour black; surfaces shiny. Head with sublateral and occipital grooves well developed, wide, clearly joined; admedian grooves wider and deeper anteriorly near occipital groove not well defined; medial process narrowed apically, wide, rounded apically, flat; surfaces micropunctured shiny. Antenna (fig. 9) long with antennomeres III-X about 2-2.5 x as long as wide, last one triangular; ventral side with narrow grooves. Pronotum (fig. 7) with sublateral lines entire, continuing forwardly along anterior margin and almost joined medially; disk with shallow, sometimes indistinct median elongate impression anteromedially; marginal groove shallowly emarginate medially; disk micropunctured. Elytra with two complete lines (I, VI) and line V marked near base. Apical piece of median lobe as in fig. 10, paramera as in fig. 8. Length 18-24 mm.

Lectotype of *P. marginata*: « Australia H. Deyrolle/ Type/ *Passandra marginata* Grouv. ».

Lectotype of *P. deyrollei*: « Australia, Brisbane/ Type/ *Passandra Deyrollei* Grouv. ».

Material examined: 4 specimens (MHNH).

Distribution: Australia.

Passandra murrayi (Grouvelle) (Figs 42, 46, 83)

Hectarthrum Murrayi Grouvelle, 1876: CXXII. - Lefkovich, 1963: 189 - In *Passandra*: Slipinski, 1983: 92.

Diagnostic combination. Narrowly elongate, subcylindrical; black; strongly shiny. Head with sublateral and occipital grooves well developed and joined; admedian grooves shallow, divergent anteriorly, closed; medial process wide, flat, broadly rounded apically; head surfaces almost smooth, shiny. Antenna moderately long, thick with antennomeres III-X subquadrate to transverse, widely grooved ventrally, glabrous; last antennomere ovoid, obtusely rounded apically. Pronotum with sublateral lines joined anteriorly and obsolete in basal 1/3

(fig. 83); marginal groove deeply emarginate medially; disk smooth or micropunctured, shiny. Elytra with three complete lines (I, V, VI), intervals smooth. Apical piece of median lobe as in fig. 46, paramera as in fig. 42. Length 10-19 mm.

Material examined: + 100 specimens from all collections except: FSCA, BPBM, TMP, UMM.

Distribution: Africa south of the Sahara.

Passandra nodicornis (Snellen v. Vollenhoven) comb. n.
(Figs 74, 96, 97, 98)

Hectarthrum nodicorne Snellen van Vollenhoven, 1864: 145. Holotype: Borneo, Mus. Leiden, not examined.

Diagnostic combination. Narrowly-oval, subdepressed, brown; surfaces smooth, shiny. Head: sublateral grooves shallow and clearly joined to deep occipital groove; admedian grooves wide, short and shallow (fig. 97); medial process narrow, triangular, pointed apically, flat or subcarinate; clypeus wide, bordered; surfaces punctured, shiny. Antenna moderately long, with antennomeres III-X subquadrate to transverse, antennomere II transverse, in males (fig. 98) antennomere III broadly dilated and II strongly transverse. Pronotum with sublateral lines entire, widely separated anteriorly; marginal groove weakly emarginate medially; disk with group of large, coarse punctures medially (size and separation of these punctures variable). Elytra with four lines complete (I, II, V, VI) but line II often obsolete in anterior 1/3, sometimes also apically, but always longer than elytral 1/2. Apical part of median lobe as in fig. 96, paramera as in fig. 74. Length 12-16 mm.

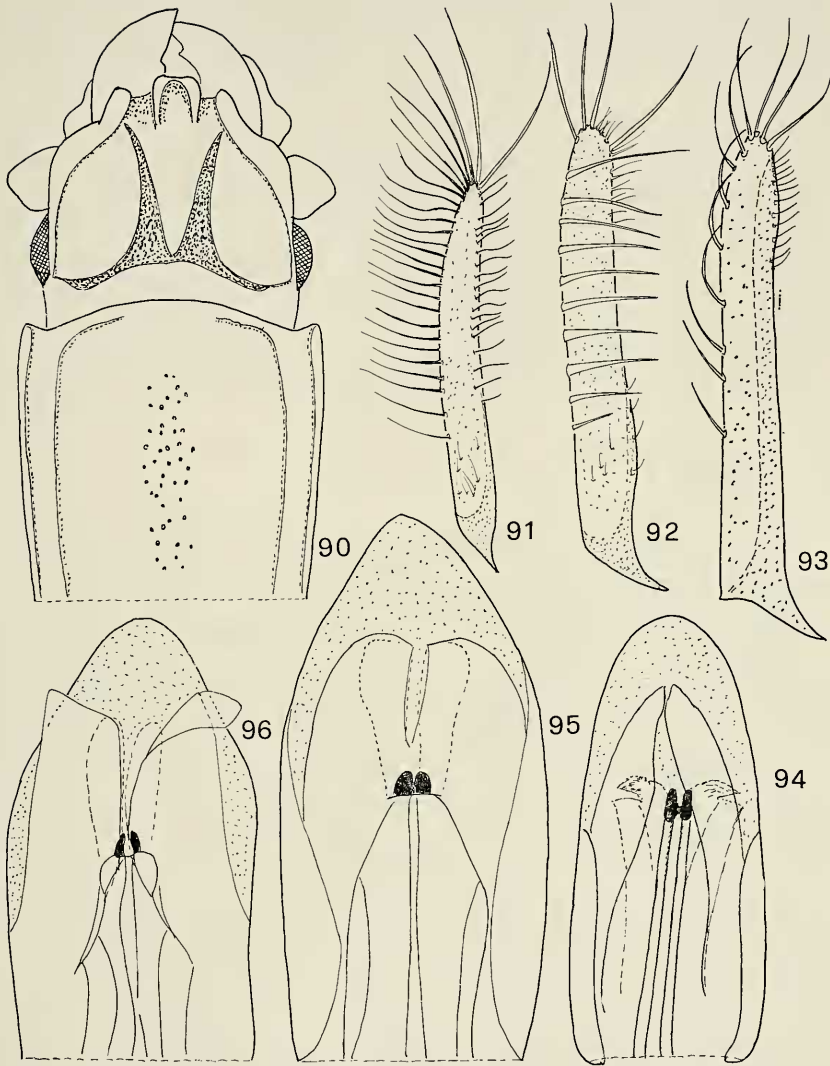
Material examined: 16 specimens (MNHN, TMB, IZPAN).

Distribution: Sumatra, Borneo.

Passandra oblongicollis (Fairmaire) (Figs 24, 25, 62)

Hectarthrum oblongicolle Fairmaire, 1886: 436, 441. Holotype: Obock, BMNH, examined.
Hectarthrum longicolle Fairmaire, 1886: 441 (incorrect spelling) - Lefkovitch, 1963: 188; Slipinski, 1983: 93.

Diagnostic combination. Narrowly-oval, moderately convex, black or dark-brown, feebly shiny. Head surface densely and rugosely punctured, almost mat; sublateral grooves reduced to carinae not joined to



Figs 90-96. *Passandra* species: *semifusca* (90); *tenuicornis* (91); *harmandi* (92, 95); *fasciata* (93, 94); *nodicornis* (96). 90: head and anterior part of pronotum; 91-93: paramera, dorsal; 94-96: median lobe, ventral.

strongly reduced occipital groove; admedian grooves narrow and deep; medial process narrow and acute apically; occipital region notched medially. Antenna slender, moderately long, with antennomeres III-X subquadrate and narrowly impressed on ventral sides; last antennomere narrowly elongate and acute apically. Pronotum with sublateral lines obsolete basally in 1/4 of their length, not joined anteriorly; marginal groove deeply notched medially; pronotal disk densely punctured, anteriorly punctures somewhat rugose and interspaces reticulate, feebly shiny; medially group of coarse punctures about 2-3 x as large as discal punctures (fig. 24). Elytra with three lines complete (I, V, VI) and intervals distinctly punctured; each elytron separately rounded at apico-sutural angle. Apical piece of median lobe as in fig. 25, spermatheca as in fig. 62. Length 8-12 mm.

Material examined: 18 specimens (BMNH, DEI, MNHN, MRAC, IZPAN, USNM).

Distribution: Ethiopia, Yemen (Aden), Tchad, Saudi Arabia, South Africa.

***Passandra penicillata* (Waterhouse) (Figs 17-19, 41, 45)**

Hectarthrum penicillatum Waterhouse, 1876: 120. Lectotype: Abyssinia, BMNH, examined - Lefkovitch, 1963: 185.

Hectarthrum Raffrayi Grouvelle, 1877a: 296. Holotype: Abyssinia, MNHN, examined.

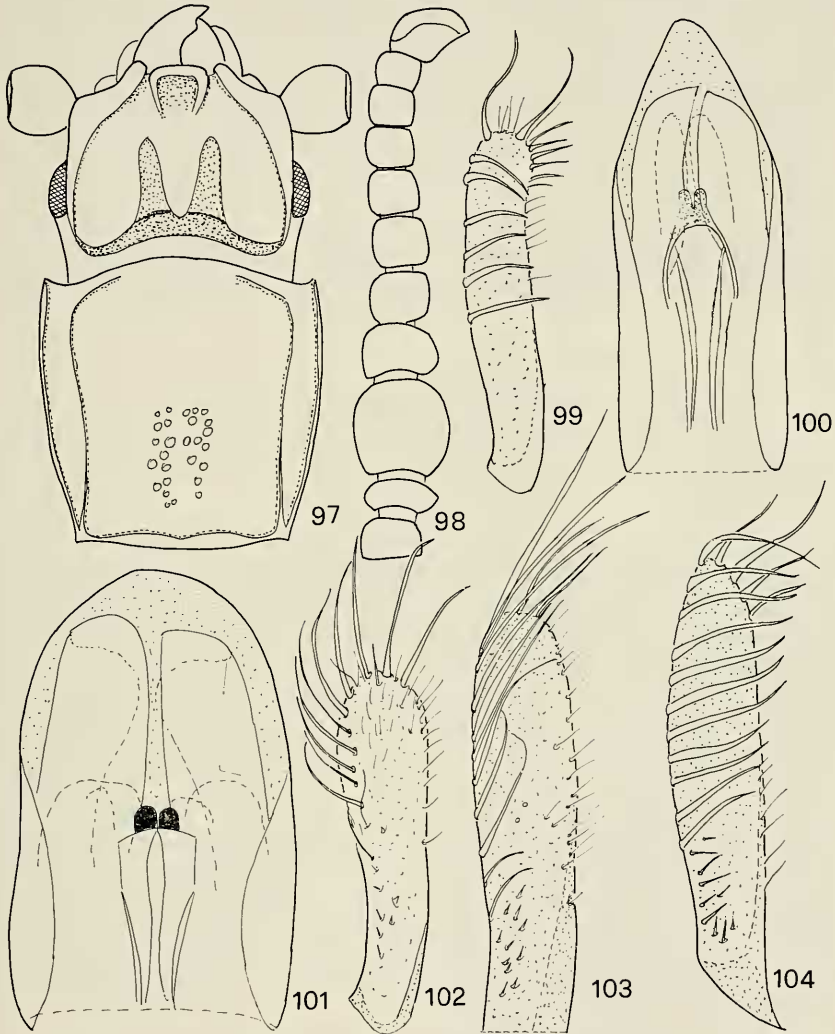
Diagnostic combination. Narrowly-oval, subdepressed, black; surfaces shiny. Head with sublateral and occipital grooves well defined, wide and clearly joined; admedian grooves wide, moderately long, closed; head surface micropunctured and reticulate, feebly shiny; frons in front of clypeus with small but distinct tubercle; clypeus bordered laterally, emarginate medially. Antenna (fig. 18) moderately long, slender with antennomeres III-X markedly longer than wide, ventrally with narrow groove and large, punctate and setose sensory area (fig. 19); last antennomere elongate-oval, obtusely acute apically. Pronotum with sublateral lines almost entire, very narrowly interrupted basally (fig. 17), continuing along anterior margin but widely separated; marginal groove almost straight; pronotal disk finely micropunctured, shiny. Elytra with only two lines (I, VI) complete, line V marked near base; intervals micropunctured. Length 16-20 mm. Apical piece of median lobe as in fig. 45, paramera as in fig. 41.

Material examined: 7 specimens (BMNH, MNHN, ZMB, IZPAN).

Distribution: Ethiopia.

***Passandra popeorum* sp. n.** (Figs 71, 72, 104)

Diagnostic combination. Narrowly-elongate, slightly depressed; black; shiny. Head with sublateral and occipital grooves well defined and joined (fig. 71); occipital region narrowly notched medially; ad-



Figs 97-104. *Passandra* species: *nodicornis* (97, 98); *heros* (99, 100); *trigemina* (101, 103); *sagena* (102); *popeorum* (104). 97: head and pronotum; 98: male antenna; 99, 102-104: paramera, dorsal; 100, 101: median lobe, ventral.

median grooves long, strongly divergent anteriorly and joined basally; medial process strongly reduced and not reaching occipital groove; clypeus narrow, sharply bordered laterally; surface micropunctured, shiny. Antenna (fig. 72) moderately long, with antennomeres III-X slightly transverse, narrowly impressed on ventral surfaces. Pronotum with sublateral lines entire, widely separated anteriorly; marginal groove deeply emarginate medially; disk sparsely micropunctured, shiny. Elytra only with two lines complete (I, VI), intervals smooth, shiny, both elytra rounded apically. Paramera as in fig. 104. Length 12 mm.

Material examined: Holotype ♂: «New Guinea, coll. Madon» (IRSNB).

Distribution: New Guinea.

This species is dedicated to my friends and colleagues Joyce and Robert D. Pope of the British Museum (Natural History) London.

***Passandra punctulicollis* (Fairmaire) (Figs 33, 38, 48)**

Hectarthrum punctulicolle Fairmaire, 1891: CCLXXXIII. Holotype: East Africa, probably lost, not examined. - Lefkovitch, 1963: 188. In *Passandra*: Ślipinski, 1983: 95.

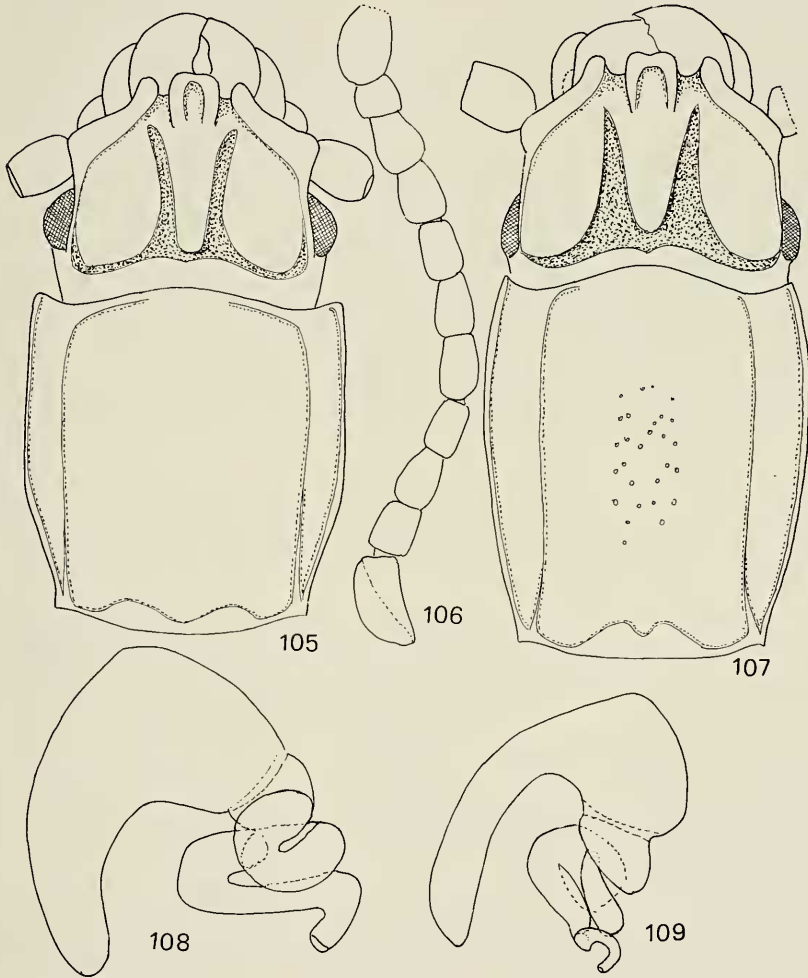
Diagnostic combination. Narrowly-elongate, slightly depressed; black; feebly shiny. Head surface coarsely punctured with interspaces reticulate, almost mat, only grooves smooth; sublateral grooves reduced to carinae and not clearly joined to reduced occipital groove (fig. 48); admedian grooves narrow, straight and deep; medial process acute apically, very narrow, convex; clypeus elongate, narrow, bordered laterally. Antenna moderately long, antennomeres III-X subquadrate, ventrally with narrow impression, glabrous. Pronotum with disk densely and rather coarsely punctured except for smooth narrow median line; punctures anterolaterally rugose with spaces reticulate, almost mat; marginal groove with simple notch medially; sublateral lines interrupted basally, widely separated anteriorly. Elytra with four lines complete (I, II, V, VI), intervals distinctly punctured, each elytron separately rounded apically. Apical piece of median lobe as in fig. 33, paramera as in fig. 38. Length 8-12 mm.

Material examined: 7 specimens (BMNH, DEI, FSCA, IZPAN).

Note. There are 2 specimens in BMNH collection with following data «Tanzania, Milkese, E.A. Forest Insect Survey» which are entirely

brown and pronotum is much finer and sparser punctate. I suppose both are teneral and both colour and sculpture are artificial.

Distribution: Ethiopia, Kenya, Tanzania.



Figs 105-109. *Passandra* species: *harmandi* (105, 106, 108); *tenuicornis* (107, 109). 105, 107: head and pronotum; 106: antenna; 108, 109: spermatheca.

***Passandra quadrilineata* (Smith) (Figs 35, 40, 73)**

Hectarthrum quadrilineatum Smith, 1851: 22. Holotype: Port Natal, BMNH, examined. - Lefkovitch, 1963: 188. In *Passandra*: Ślipinski, 1983: 97.

Diagnostic combination. Narrowly-elongate, subcylindrical; black except for reddish legs and elytral apices; surfaces shiny. Head with sublateral groove reduced to a carina and not clearly joined to transverse occipital groove (fig. 73); occipital region notched medially; admedian grooves shallow, almost parallel; medial process obtusely acute apically, carinate anteriorly, carina entering in clypeal region; head surface densely micropunctured, spaces, especially laterally reticulate, feebly shiny. Antenna moderately long, thick, segments subquadrate, ventrally with fine linear impression. Pronotum with admedian region smooth or micropunctured, rarely there are 3-6 larger punctures medially; sublateral lines absent in basal 1/5, not continuing anteriorly; marginal groove deeply notched medially. Elytra with four complete lines (I, II, V, VI), intervals smooth or micropunctured. Apical piece of median lobe as in fig. 35, paramera as in fig. 40. Length 8-18 mm.

Material examined: + 100 specimens from almost all collections.

Distribution: Africa south of the Sahara.

***Passandra rufipennis* (Fabricius) comb. n. (Figs 49, 80, 81, 86)**

Cucujus rufipennis Fabricius, 1801: 93. Type(s): Sumatra, not examined. In *Hectarthrum*: Newman, 1839: 396.

Diagnostic combination. Body narrowly-elongate, slightly depressed; black with elytra and legs piceous-brown, rarely pronotum brownish-black but still apparently darker than elytra; surfaces shiny. Head with sublateral groove reduced to carina and not clearly joined to occipital groove; admedian grooves deep, long and divergent anteriorly (fig. 49), open or joined to sublateral carinae anteriorly; median process triangular, rounded apically, dorsally faintly carinate; clypeus bordered laterally. Antenna moderately long, antennomeres III-X subquadrate to transverse, ventrally with linear impressions. Pronotum sparsely punctured except for median group of large coarse punctures, those punctures often contiguous; sublateral lines entire and joined anteriorly (very rarely almost joined); marginal groove curved medially. Prosternal process wide, strongly expanded apically (fig. 86). Elytra with four lines (I, II, V, VI) complete; intervals sparsely micropunctured, shiny. Median lobe as in fig. 81, paramera as in fig. 80. Length 6-15 mm.

Material examined: 25 specimens (DEI, MNHN, ZMB, IZPAN) .

Distribution: Sumatra, Borneo.

Remarks. I have not seen the original material of Fabricius' species, but I rely on the original description, Newman's and later Grouvelle's interpretations of this species, which is fairly distinctive because of its contrasting colouration.

Passandra sagera (Lefkovitch) (Figs 27, 30, 58, 102)

Hectarthrum sagerum Lefkovitch, 1963: 186. Holotype: Ethiopia, MNHN, examined. - In *Passandra*: Ślipinski, 1983: 97.

Diagnostic combination. Narrowly-elongate, subdepressed; head and pronotum feebly shiny, almost mat, elytra moderately shiny; colour black or dark-brown. Head: sublateral grooves reduced to carinae and not joined to reduced occipital groove; admedian grooves narrow, almost straight; medial process narrow, weakly carinate dorsally, acute apically; occipital region notched medially; clypeus bordered; head surface except for grooves densely, rugosely punctured, interspaces reticulate, almost mat. Antenna moderately long, segments subquadrate, ventral sides with linear impressions. Pronotum (fig. 30) anterolaterally as head sculptured, posteriorly punctures not rugose and interspaces feebly reticulate or smooth, shiny; admedian grooves about 0.7 length of pronotum, converging anteriorly; sublateral lines broken just near base, not continuing anteriorly; marginal groove deeply notched medially. Elytra with four lines complete (I, II, V, VI); intervals densely micropunctured, often with short transverse impressions. Apical piece of median lobe as in fig. 27, paramera as in fig. 102, spermatheca as in fig. 58. Length 5-11 mm.

Material examined: 11 specimens (BMNH, MNHN, TMB, EMLU, IZPAN).

Distribution: Ethiopia, Kenya, Ghana, Gambia, Senegal.

Passandra semifusca (Newman) comb. n. (Figs 77, 90, 110-112)

Hectarthrum semifuscum Newman, 1839: 396. Holotype; locality unknown, BMNH examined.

Diagnostic combination, *P. semifusca* shares with *rufipennis* and *tenuicornis* the combination of entire pronotal lines, coarsely punctate disk of pronotum and four complete lines on each elytron. Also all those species have more or less reddish elytra. *P. semifusca* is especially

similar to *rufipennis* because of the pronotum apparently darker than elytra, the admedian grooves of head narrow and long and the pronotal punctures coarse and more frequent than in *tenuicornis*. Both these species can be surely separated only on basis of their genital structures; the external differences, usually obvious, because of great variability do not always allow to discriminate the proper species. *P. semifusca* differs from *rufipennis* as follows: (1) pronotum brownish-black, never black; (2) pronotal sublateral lines never joined anteriorly (fig. 90), always widely separated; (3) pronotal punctures comparatively smaller and more frequent than in *rufipennis*; (4) prosternal process more parallel-sided. This species may be separated from *P. tenuicornis* because of pronotum distinctly darker than elytra (body uniformly reddish in *tenuicornis*), the admedian groove of head narrower and longer and the marginal groove of pronotum shallowly emarginate medially (fig. 77) in addition to the distinctive genitalia (figs 110-112). Length 7-10 mm.

Holotype data: « Type/ *semifuscum* Newm. 4956/4956 ».

Material examined: 16 specimens (BMNH, MNHN, ZMB, IZPAN, DEI).

Distribution: Sumatra.

***Passandra sexstriata* Dalman (Figs 23, 26, 44)**

Passandra sexstriata Dalman in Schoenherr, 1817: 146. Type not examined - Slipinski, 1983: 98.

Diagnostic combination. Broadly-oval, flattened; head and pronotum brown, elytra dark-brown to black, apparently darker than head and pronotum, very rarely body uniformly brown. Head with sublateral grooves well defined (fig. 23) but not joined to strongly reduced occipital groove; admedian grooved and medial process not defined. Antenna long, slender with antennomeres III-X about 1.5-2 x as long as wide, ventral sides with narrow grooves, setose to densely setose, setae yellow to orange. Pronotum with strongly prominent and acute anterior angles, sublateral lines absent; anterolaterally group of coarse, elongate punctures on each side; marginal groove almost straight medially. Elytra with 2 complete lines (I, VI), intervals smooth. Apical piece of median lobe as in fig. 44, paramera as in fig. 26. Length 16-32 mm.

Material examined: + 100 specimens from all collections.

Distribution: Tchad, Ivory Coast, Senegal, Cameroon, Tanzania, Zaire, Angola.

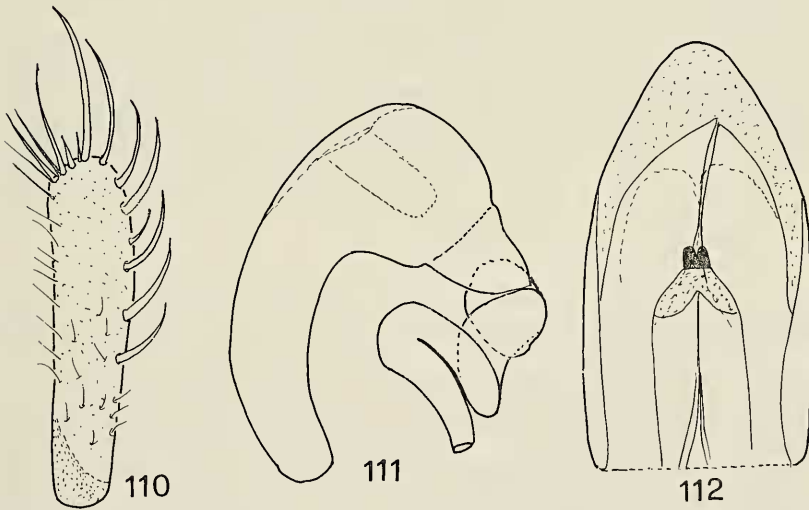
Passandra simplex (Murray) (Figs 20-22, 43, 47, 61)

Hectarthrum simplex Murray, 1867: 340. Holotype: Old Calabar, BMNH, examined. - In *Passandra*: Slipinski, 1983: 100.

Hectarthrum corticinum Peringuey, 1888: 91. Syntypes: Transvaal, SAM ?, not examined. - Grouvelle, 1891: CIV.

Hectarthrum puncticeps Grouvelle, 1915: 70. Holotype: Transvaal, MNHN, examined. - Lefkovitch, 1963: 189.

Diagnostic combination. Narrowly-elongate to subcylindrical; colour black; surfaces moderately shiny. Head (fig. 20) with sublateral grooves reduced to carina, not joined to occipital groove, which is visible only near middle; admedian grooves almost straight; medial process acute apically, convex; occipital region notched medially; head surface densely micropunctured, sides often rugosely punctured with interspaces reticulate, almost mat, medial process shiny. Antenna (fig. 21) with antennomeres III-IX subquadrate to transverse, ventrally with fine linear impression (fig. 22). Pronotum with sublateral lines absent in basal 1/4, not continuing anteriorly along margin; marginal groove deeply notched medially; disk regularly micropunctured, shiny. Elytra



Figs 110-112. *Passandra semifusca*. 110: paramera, dorsal; 111: spermatheca; 112: median lobe, ventral.

with three lines complete (I, V, VI) intervals micropunctured. Apical piece of median lobe as in fig. 47, paramera as in fig. 43, spermatheca as in fig. 61. Length 7-13 mm.

Material examined: 47 specimens (BMNH, MNHN, NHMB, NHMV, TMB, TMP, MRAC, IRSNB, ZMB, IZPAN, DEI).

Distribution: Africa south of the Sahara.

***Passandra tenuicornis* (Grouvelle) comb. n.**

(Figs 75, 76, 87, 91, 107, 109)

Hectarthrum tenuicorne Grouvelle, 1913: 53. Lectotype, present designation: Tonkin, MNHN, examined.

Diagnostic combination. This species is very similar to *P. semifusca*, see that species for differences (p. 595). Often certain determination is possible only on basis of genitalia, especially the parameres are very distinctive (fig. 91). Individuals of this species are usually uniformly brown or yellowish-brown with pronotum not darker than elytra. Pronotal punctures variable, usually reduced to a few larger punctures near middle (fig. 107). Pronotum with marginal groove deeply emarginate medially (fig. 76). Apical piece of median lobe as in fig. 75, paramera as in fig. 91, spermatheca as in fig. 109. Length 7-12 mm.

Lectotype data: « Tonkin/ Type/ *Hectarthrum tenuicorne* Grouv. ».

Paralectotypes: « Tonkin Demanje/ Type » (1, MNHN); « Tonkin, region de Hong-Hai/Type » (1, MNHN); « Formosa, Fuhosho. H. Sauter/ Typus/ 7.IX/ Grouvelle det/ *Hectarthrum tenuicorne* Grouv. » (1, DEI).

Material examined: 18 specimens (MNHN, DEI, IRSNB, IZPAN, ZMB).

Distribution: Laos, Vietnam, Taiwan.

***Passandra trigemina* (Newman) comb. n. (Figs 29, 32, 101, 103)**

Hectarthrum trigeminum Newman, 1839: 393. Lectotype, present designation: locality ?, BMNH, examined.

Hectarthrum latum Grouvelle, 1874: XXVIII. Neotype, here designated: Moluques, MNHN, examined. Syn. n.

Hectarthrum sociale Waterhouse, 1876: 119. Lectotype, present designation: New Guinea, BMNH, examined. Syn. n.

Hectarthrum sociale var. *minor* Waterhouse, 1876: 119. Syntypes: Java, Philippines, BMNH, examined. Syn. n.

Hectarthrum dejectum Waterhouse, 1876: 120. Holotype: Batjan, BMNH, examined. Syn. n.

Passandra penicillata: Šlipinski, 1983; 94, figs 13, 14 (misidentification).

Body shape variable from narrowly-elongate or almost subcylindrical to broadly-oval and flattened; colour brown to black; surfaces shiny. Head with median process apically rounded (fig. 29) and clearly joined with clypeal region, clypeus not clearly bordered; admedian grooves anteriorly open. Antenna variable, but last antennomere ovoid and obtusely rounded apically, and antennomeres III-X widely grooved on ventral sides, glabrous (fig. 32). Pronotum with sublateral lines obsolete at basal $1/4-1/3$, shortly continuing anteriorly; marginal groove usually curved medially. Elytra with three complete lines (I, V, VI). Apical piece of median lobe as in fig. 101, paramera as in fig. 103. Length 5-22 mm.

Type material:

H. trigeminum, lectotype: «syntype/ *trigeminum* Newman/ 4955».

H. latum, neotype: «Moluques/ *Hectarthrum latum* A. Grouvelle/ ex coll. Reitter/ coll. R. Oberthür».

H. sociale, lectotype: «syntype/N/ *socialis*, C. Waterh/ type».

Material examined: + 700 specimens from all collections.

Distribution: Indo-Australian (from South China and Sikkim to North Australia).

Remarks. Specimens redescribed and figured as *P. penicillata* in my paper (ŠLIPINSKI, 1983) and labelled «Kenya, Nairobi, Muche X.1960, ex coll. Breuning (MRAC) apparently belong to this species and not to *penicillata*. Both these species and the holotype of *P. bicolorata* have the same labels and all come from Laos or Vietnam and not from Kenya at all.

***Passandra uniformis* (Waterhouse) comb. n. (Figs 78, 88, 89)**

Hectarthrum uniforme Waterhouse, 1876: 120. Lectotype, present designation: South India, BMNH, examined.

Diagnostic combination. Moderately wide and flattened; black; surface shiny. Head with sublateral and occipital grooves wide and clearly joined; medial process wide, flattened and rounded apically; clypeus bordered laterally; surface micropunctured, shiny. Pronotum (fig. 78) with sublateral lines entire, shortly continuing anteriorly but widely separated; marginal groove straight medially; disk sparsely micropunctured. Elytra with four lines complete (I, II, IV; VI); in-

tervals micropunctured. Apical piece of median lobe as in fig. 89, paramera as in fig. 88. Length 10-18 mm.

Lectotype data: «syntype/ S. Ind. 6120/ *uniformis* C. Waterh. (type)».

Material examined: 9 specimens (BMNH, MNHN, IZPAN, ZMB).

Distribution: Ceylon, South India.

***Passandra waterhousei* Grouvelle (Figs 13a, 14a, 57)**

Passandra waterhousei Grouvelle, 1885: XXXI. Lectotype: Abyssinia, MNHN, examined. - Lefkovitch, 1963: 186 (lectotype). - In *Passandra*: Šlipinski, 1983: 101.

Passandra transvaalensis Peringuey, 1888: 90. Lectotype, present designation: Transvaal, SAM, examined. Syn. n.

This species is very similar to *P. gigas*, the only external differences are uniformly brown or black body, slender and slightly longer antennae and the elytral apices together rounded (fig. 13a). Median lobe as in fig. 14a, paramera as in *gigas*, spermatheca as in fig. 57. Length 10-20 mm.

Lectotype data of *P. transvaalensis*: «*P. rusticorum*/ Huslinb/ V/ Rustenb urg / *transvaalensis* Péring.» Paralectotype with same data (SAM).

Material examined: 48 specimens (BMNH, MNHN, NHMB, NHMV, DEI, SAM, TMB, TMP, USNM).

Distribution: Ethiopia, Kenya, Cameroon, Zaire, South Africa (Transvaal).

***Passandra zairensis* Šlipinski (Figs 59, 69, 70, 79, 82)**

Passandra zairensis Šlipinski, 1983: 102. Holotype: Zaire, MRAC, examined.

Diagnostic combination. Narrowly-elongate, subcylindrical; dark-brown to black; surfaces shiny. Head (fig. 79) with sublateral and occipital grooves reduced to carinae and not clearly joined; admedian grooves anteriorly open, shallow; medial process flat, acute or obtusely acute apically, anteriorly carinate, carina anteriorly enters clypeal region; clypeus long and narrow, sharply bordered; surface micropunctured, shiny. Antenna moderately long with antennomeres III-X subquadrate, ventrally widely grooved (fig. 82). Pronotum narrow, parallelsided with sublateral lines short, not reaching anterior margin and absent in basal 1/3; marginal groove emarginate medially; surface almost smooth. Elytra with two complete lines (I, VI), both joined basally; line V vi-

sible at basal 1/3; each elytron separately rounded to apico-sutural angle. Apical piece of median lobe as in fig. 69, paramera as in fig. 70, spermatheca as in fig. 59. Length 8-11 mm.

Material examined: 5 specimens (MRAC, IZPAN, ZMB).

Distribution: Zaire, Cameroon, Ghana.

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SUMMARY

The World species of the genus *Passandra* Dalman (= *Hectarthrum* Newman) are reviewed and figured, and a key to their determination is provided. Two new species are described: *P. kasiae* (Thailand) and *P. popeorum* (New Guinea). The following new synonymy are proposed: *Passandra fasciata* Gray (= *rubrolineata* Blanchard; = *brasiliensis* Chevrolat; = *miles* Thomson; = *mexicana* Casey); *P. harmandi* Grouvelle (= *P. bicolorata* Slipinski); *Passandra heros* (Fabricius) (= *Hectarthrum depressum*

Smith; = *H. orientale* Schaufuss; = *H. angustatum* Grouvelle; = *P. atra* Šlipinski); *P. marginata* Grouvelle (= *deyrollei* Grouvelle); *P. trigemina* (Newman) (= *Hectarthrum latum* Grouvelle; = *H. sociale* Waterhouse; = *H. sociale* var. *minor* Waterhouse; = *H. dejectum* Waterhouse); *P. waterhousei* Grouvelle (= *P. transvaalensis* Péringuey).

RIASSUNTO

Le specie mondiali del genere *Passandra* Dalman (= *Hectarthrum* Newman) sono riviste e figurate, e viene fornita una chiave per la loro determinazione. Sono descritte due nuove specie: *P. kasiae* (Tailandia) e *P. popeorum* (Nuova Guinea). Vengono proposte le seguenti nuove sinonimie: *Passandra fasciata* Gray (= *rubrolineata* Blanchard; = *brasiliensis* Chevrolat; = *miles* Thomson; = *mexicana* Casey); *P. harmandi* Grouvelle (= *P. bicolorata* Šlipinski); *Passandra heros* (Fabricius) (= *Hectarthrum depressum* Smith; = *H. orientale* Schaufuss; = *H. angustatum* Grouvelle; = *P. atra* Šlipinski); *P. marginata* Grouvelle (= *deyrollei* Grouvelle); *P. trigemina* (Newman) (= *Hectarthrum latum* Grouvelle; = *H. sociale* Waterhouse; = *H. sociale* var. *minor* Waterhouse; = *H. dejectum* Waterhouse); *P. waterhousei* Grouvelle (= *P. transvaalensis* Péringuey).
